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=> d his ful

     FILE 'REGISTRY' ENTERED AT 11:59:37 ON 22 SEP 2003
                  E VITAXIN/CN
L1             1 SEA ABB=ON  VITAXIN/CN
                  E MEDI 493/CN
L2             1 SEA ABB=ON  "MEDI 493"/CN

     FILE 'HCAPLUS' ENTERED AT 12:00:12 ON 22 SEP 2003
L3            85 SEA ABB=ON  ?PILUS?(W)?PROTEIN?
L4             0 SEA ABB=ON  L3 AND ?SUBSTRATE?(6A)?USHER?(W)?CHAPERONE?
L5             2 SEA ABB=ON  L3 AND ?SUBSTRATE?
                  D AU 12
L6             0 SEA ABB=ON  L3 AND ?USHER?(W)?CHAPERONE?
L7            11 SEA ABB=ON  L3 AND (FIMH OR FIMA OR FIMG OR FIMF OR PAPG OR
                  PAPA OR PAPE OR PAPF OR PAPK)
L8             5 SEA ABB=ON  L3 AND ?ADHESIN?(4A)(FIMH OR PAPG)
L9             0 SEA ABB=ON  L3 AND ?ACTIVE?(W)?FRAGMENT?
L10            0 SEA ABB=ON  L3 AND N(W)?TERMINAL?(W)?DELETED?
L11            0 SEA ABB=ON  L3 AND ?TERMINAL?(W)?DELETED?
L12            0 SEA ABB=ON  L3 AND ?EFFECTOR?(W)?PORTION?
L13            3 SEA ABB=ON  L3 AND ?DONOR?(W)?STRAND?
L14           23 SEA ABB=ON  L3 AND ?ANTIBOD?
L15            0 SEA ABB=ON  L3 AND ?LINK?(5A)?EFFECTOR?
L16            8 SEA ABB=ON  L3 AND ?IMMUNOGLOB?
L17            0 SEA ABB=ON  L16 AND (?HEAVY? OR ?LIGHT?)
L18            6 SEA ABB=ON  L3 AND ?ANTIGENIC?(W)?DETERMIN?
L19            1 SEA ABB=ON  L3 AND ?CARRIER?
L20            0 SEA ABB=ON  L3 AND ?ADMINIST?(5A)?PATIENT?
L21            2 SEA ABB=ON  L3 AND ?PATIENT?
L22            1 SEA ABB=ON  L3 AND (?URINARY?(W)?TRACT?(W)?INFECT? OR UTI)
L23            0 SEA ABB=ON  L3 AND (?COMPLEX?(5A)(FIMG OR FIMC))
L24           12 SEA ABB=ON  L3 AND (?TREAT? OR ?PREVENT?)
L25            2 SEA ABB=ON  L24 AND (?PROCESS? OR ?PROCED?)
L26           18 SEA ABB=ON  L3 AND ?VACCIN?
L27            0 SEA ABB=ON  L26 AND ?PROPHYL?(W)?EFFECT?
L28            1 SEA ABB=ON  L3 AND ?CHEMOTHERAP?
L29            0 SEA ABB=ON  L3 AND (?ANTICANCER? OR ?ANTI?(W)?CANCER?)
L30            1 SEA ABB=ON  L3 AND ?CYTOPROTECT?
L31            2 SEA ABB=ON  L3 AND ?ANTIBIOTIC?
L32            1 SEA ABB=ON  L3 AND (L1 OR ?VITAXIN)
L33            1 SEA ABB=ON  L3 AND (L2 OR ?MEDI?(W)493)
L34           46 SEA ABB=ON  (L7 OR L8 OR L14 OR L16 OR L18 OR L19 OR L21 OR
                  L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32 OR L33)
                  46 cit's from CA Plus
     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, JICST-EPLUS, JAPIO' ENTERED AT
     12:18:11 ON 22 SEP 2003
L35          121 SEA ABB=ON  L34
L36           67 DUP REMOV L35 (54 DUPLICATES REMOVED) 67* cit's from other d.b.'s
L37            0 SEA ABB=ON  L36 AND (L1 OR ?VITAXIN)
L38            1 SEA ABB=ON  L36 AND (L2 OR ?MEDI?(W) 493)
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* As you will see, there are only 8 or 9 of these that are too recent for your case, so I'm giving them all to you. MJ

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=> d que stat l34
L1             1 SEA FILE=REGISTRY ABB=ON  VITAXIN/CN
L2             1 SEA FILE=REGISTRY ABB=ON  "MEDI 493"/CN
L3            85 SEA FILE=HCAPLUS ABB=ON  ?PILUS?(W)?PROTEIN?
L7            11 SEA FILE=HCAPLUS ABB=ON  L3 AND (FIMH OR FIMA OR FIMG OR FIMF
                  OR PAPG OR PAPA OR PAPE OR PAPF OR PAPK)
L8             5 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ADHESIN?(4A)(FIMH OR PAPG)
L14           23 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIBOD?
L16            8 SEA FILE=HCAPLUS ABB=ON  L3 AND ?IMMUNOGLOB?
L18            6 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIGENIC?(W)?DETERMIN?
L19            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CARRIER?
L21            2 SEA FILE=HCAPLUS ABB=ON  L3 AND ?PATIENT?
L22            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (?URINARY?(W)?TRACT?(W)?INFECT?
                  OR UTI)
L24           12 SEA FILE=HCAPLUS ABB=ON  L3 AND (?TREAT? OR ?PREVENT?)
L25            2 SEA FILE=HCAPLUS ABB=ON  L24 AND (?PROCESS? OR ?PROCED?)
L26           18 SEA FILE=HCAPLUS ABB=ON  L3 AND ?VACCIN?
L28            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CHEMOTHERAP?
L30            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CYTOPROTECT?
L31            2 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIBIOTIC?
L32            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (L1 OR ?VITAXIN)
L33            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (L2 OR ?MEDI?(W)493)
L34           46 SEA FILE=HCAPLUS ABB=ON  (L7 OR L8 OR L14 OR L16 OR L18 OR L19
                  OR L21 OR L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32
                  OR L33)
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=> d ibib abs hitrn l34 1-46

L34 ANSWER 1 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:277269 HCAPLUS
DOCUMENT NUMBER: 138:285764
TITLE: Vector priming reduces the immunogenicity of salmonella-based **vaccines** in Nramp1+/+ mice
AUTHOR(S): Vindurampulle, Christofer J.; Attridge, Stephen R.
CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, 5005, Australia
SOURCE: Infection and Immunity (2003), 71(4), 2258-2261
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The present studies in Nramp1-/- BALB/c and Nramp1+/+ CBA mice question the significance of this genotype as a determinant of the level of gut colonization following oral administration of naturally attenuated or highly virulent Salmonella strains. In line with previous results in BALB/c hosts, vector priming of CBA mice with Salmonella enterica serovar Stanley was found to significantly compromise the immunogenicity of a recombinant construct expressing a foreign **pilus protein**
.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2003:18487 HCAPLUS
DOCUMENT NUMBER: 138:135434
TITLE: Impact of vector priming on the immunogenicity of recombinant Salmonella **vaccines**
AUTHOR(S): Vindurampulle, Christofer J.; Attridge, Stephen R.
CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, 5005, Australia
SOURCE: Infection and Immunity (2003), 71(1), 287-297
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB There are conflicting reports concerning the impact of prior vector priming on the immunogenicity of recombinant-Salmonella-based **vaccines**. A comparison of exptl. protocols identified two variables which might account for this inconsistency: the potential of the vector strain to colonize the murine gut-assocd. lymphoid tissue (GALT) and the nature of the foreign antigen subsequently delivered by the recombinant Salmonella construct. The former was investigated by constructing an aroA mutant of the Salmonella enterica serovar Stanley vector previously used in the authors' lab. Although the introduction of an aroA mutation had surprisingly little effect on GALT colonization, it did reduce the strength of antilipopolysaccharide (anti-LPS) **antibody** responses and the impact of vector priming. Studies were also performed to ascertain the extent to which any obsd. hyporesponsiveness consequent upon vector priming might be detd. by the characteristics of the foreign antigen. S. enterica serovar Stanley was used to deliver either of two Escherichia coli antigens, K88 **pilus protein** or the LT-B toxin subunit, to vector-primed mice. Both serum IgG and intestinal IgA responses to K88 were completely abolished, and those to LT-B were significantly reduced, as a consequence of vector priming. When similar expts. were performed with an aroA S. enterica serovar Dublin vector, responses to K88 were significantly reduced but

those to LT-B were unaffected by vector priming. Paradoxically, a priming infection with this vector induced stronger anti-LPS **antibody** responses but was less likely to elicit a state of hyporesponsiveness to subsequently presented foreign antigen. The impact of vector priming thus depends on both the Salmonella strain used and the nature of the foreign antigen, but the authors' present data strengthen concerns that preexisting antivector immunity represents a serious threat to the Salmonella-based **vaccine** strategy.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:505237 HCAPLUS
DOCUMENT NUMBER: 137:62166
TITLE: Engineered **pilus proteins** for **vaccination** and immunotherapy
INVENTOR(S): Hultgren, Scott J.; Langermann, Solomon; Sauer, Frederic G.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 27 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002086037	A1	20020704	US 2001-27350	20011228
WO 2002059156	A2	20020801	WO 2001-US51037	20011220
WO 2002059156	A3	20030515		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-257880P P 20001222

AB The authors disclose construction of **pilus proteins** exhibiting structural stabilization. Stabilization is achieved by occupation of the subunit-binding site by a covalently attached N-terminal extension domain or non-covalently by an engineered chaperone or other **pilus protein**. Such extension provides a "donor strand complementary" segment which may be altered to attach an auxiliary portion.

IT **188039-54-5**, Synagis **324740-00-3**, **Vitaxin**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(of engineered **pilus proteins** with effector domains)

L34 ANSWER 4 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:103098 HCAPLUS
DOCUMENT NUMBER: 136:275819
TITLE: Identification and characterization of assembly proteins of CS5 pili from enterotoxigenic Escherichia coli
AUTHOR(S): Duthy, Thomas G.; Manning, Paul A.; Heuzenroeder,

Michael W.
CORPORATE SOURCE: Discipline of Microbiology and Immunology, Department of Molecular BioSciences, University of Adelaide, Adelaide, 5005, Australia
SOURCE: Journal of Bacteriology (2002), 184(4), 1065-1077
CODEN: JOBAAY; ISSN: 0021-9193
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This study investigated the role of three genes comprising part of the operon which encodes CS5 pili from enterotoxigenic Escherichia coli. In-frame gene deletions were constructed, and the effects on biogenesis of the pili were examd. A deletion in csfB abolished CsfA major subunit accumulation in the periplasm, which could be restored by trans-complementation with a complete copy of the csfB gene. Localization studies using an **antibody** against CsfB showed that this protein was periplasmically located, and thus CsfB is likely to function as the specific chaperone for CsfA. An in-frame deletion mutation in the csfE gene resulted in pili approx. three times longer than those of the wild-type strain, thereby indicating a role for CsfE in pilus length regulation. Localization studies using an **antibody** generated against CsfE showed low-level CsfE accumulation in the outer membranes. Modulation of csfE expression in trans did not reduce the mean length of the pilus below that of the wild type, which indicated that CsfE is not rate-limiting for termination of pilus assembly. A deletion in the csfF gene also resulted in an elongated pilus morphol. identical to that of the csfE deletion strain. However, unlike CsfE, CsfF was shown to be rate-limiting for termination of assembly, since overexpression of CsfF in a csfF deletion strain resulted in a significant decrease in the mean length of the pilus compared to that of the wild type. When the same construct was introduced into the wild-type strain, pilus expression was abolished. Since CsfF bears significant homol. to the proposed CsfB chaperone, CsfF was predicted to act as the specific chaperone for CsfE. A double deletion in the csfB and csfF genes was shown to abolish the periplasmic accumulation of both CsfA and CsfD pilins, which could be restored individually only when the strain was trans-complemented with a wild-type copy of csfB or csfF, resp. Therefore, CsfF may chaperone not only CsfE but also CsfD. A model for CS5 biogenesis is also proposed based on these and previous observations.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 5 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:334107 HCAPLUS
DOCUMENT NUMBER: 135:177920
TITLE: Immunoblot analysis of cyanogen bromide-cleaved Moraxella bovis pilin reveals presence of shared **antigenic determinants** on pili from heterologous strains
AUTHOR(S): Greene, W. H.; Grubbs, S. T.; Potgieter, L. N. D.
CORPORATE SOURCE: College of Veterinary Medicine, Department of Comparative Medicine, University of Tennessee, Knoxville, TN, 37901-1071, USA
SOURCE: Veterinary Microbiology (2001), 80(4), 365-372
CODEN: VMICDQ; ISSN: 0378-1135
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Moraxella bovis **pilus proteins**, collected and purified from four strains of M. bovis, were cleaved with cyanogen bromide. Two

major fragments were produced. Antisera were produced in rabbits to the pilin protein fragments and to whole uncleaved pili from these strains. Immunoblots of whole and cyanogen bromide-cleaved pilin were reacted with the homologous and heterologous antisera to whole pili and cleaved pilin. Antisera to whole pili reacted strongly with homologous pilin. Weaker and inconsistent reactions were detected with heterologous pilin. Antisera produced to cyanogen bromide-cleaved pilin proteins reacted strongly with homologous and heterologous pilin fragments and uncleaved pilin proteins. These findings demonstrate the presence of conserved **antigenic determinants** on pili from heterologous strains that are non-immunogenic in the intact pilus but are immunogenic after **treatment** with cyanogen bromide. Cyanogen bromide-**treated** pilus prepn. might have potential as a **vaccine** because **antibodies** are induced against heterologous strains of M. bovis, whether these cross-reactive **antibodies** are protective remains to be detd.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:50674 HCAPLUS
DOCUMENT NUMBER: 134:114827
TITLE: Donor strand complemented pilin and adhesin broad-based **vaccines**
INVENTOR(S): Hultgren, Scott J.; Pinkner, Jerome S.; Sauer, Frederic; Barnhart, Michelle; Waksman, Gabriel; Knight, Stefan
PATENT ASSIGNEE(S): Medimmune, Inc., USA
SOURCE: PCT Int. Appl., 92 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001004148	A2	20010118	WO 2000-US19066	20000713
WO 2001004148	A3	20010628		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1194561	A2	20020410	EP 2000-947305	20000713
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2003504083	T2	20030204	JP 2001-509757	20000713

PRIORITY APPLN. INFO.:
US 1999-143582P P 19990713
US 1999-144359P P 19990716
US 2000-184442P P 20000223
WO 2000-US19066 W 20000713

AB Modified polypeptides contg. a **pilus-protein** sequence and a donor complementary sequence are disclosed, as well as complexes formed of a modified polypeptide and a pilin, or **pilus-protein**. Also disclosed are methods of using these novel

polypeptides as a means of **preventing** and/or **treating** bacterial induced diseases, esp. those caused by enterobacteria such as Escherichia coli. Methods of employing these modified pilus-derived polypeptides and complexes as **vaccines** and for generating **antibodies** for further study as well as for clin. purposes are also disclosed herein. In addn., **processes** for large scale prodn. of antibacterial **vaccines** contg. said polypeptides and complexes are also described.

L34 ANSWER 7 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:911460 HCAPLUS
DOCUMENT NUMBER: 134:70354
TITLE: Detection of Salmonella enteritidis by detecting **antibodies** to fimbrial or flagellin proteins
INVENTOR(S): Kwang, Hwei-Sing; Liu, Wei; Low, Su-Shing Sharon; Loh, Kwang Yeng Hilda
PATENT ASSIGNEE(S): Institute of Molecular Agrobiology, Singapore
SOURCE: PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000078995	A1	20001228	WO 1999-SG61	19990622
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9948172	A1	20010109	AU 1999-48172	19990622

PRIORITY APPLN. INFO.: WO 1999-SG61 A 19990622
AB A method for detecting Salmonella enteritidis in poultry and their eggs comprises contacting a biol. sample obtained from poultry suspected of contg. S. enteritidis with a fragment of a S. enteritidis fimbrial protein or a fragment of a S. enteritidis flagellin protein which specifically recognizes S. enteritidis **antibodies** present in the sample and discriminates between S. enteritidis and other Salmonella spp.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 46 HCAPLUS COPYRIGHT [illegible]on STN
ACCESSION NUMBER: 2000:832370 H
DOCUMENT NUMBER: 135:151244
TITLE: Immunoprotect
protein of u
AUTHOR(S): Kang, Ning; [illegible]i, Xiaoxia
CORPORATE SOURCE: Department
University, [illegible]na
SOURCE: Tianjin Yi
CODEN: TI
PUBLISHER: Tianjin Y
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The immunoprotective effects of the **pilus protein** **papA** of uropathogenic Escherichia coli (UPEC) were studied. A 554-bp DNA fragment encoding the **PapA** mature polypeptide was amplified using PCP and cloned into eukaryotic expressing plasmid pcDNA3. The recombinant plasmid pCT37 was employed as DNA **vaccine** to immunize BALB/c mice. The **antibody** titers in expt. group (1:5750) was higher than that in the control group (1:4000), using whole bacterial ELISA (enzyme-linked immunoabsorbent assay). Both urine and renal colony counts indicated less frequent colonization in expt. group, though there was no significant difference in renal invasion between two groups. Thus, protein **papA** has a good immunoprotective effect.

L34 ANSWER 9 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:608611 HCAPLUS
DOCUMENT NUMBER: 133:213075
TITLE: Use of bioadhesives and adjuvants for the mucosal delivery of antigens
INVENTOR(S): Singh, Manmohan; O'Hagan, Derek
PATENT ASSIGNEE(S): Chiron Corp., USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000050078	A1	20000831	WO 1999-US11906	19990528
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9946730	A1	20000914	AU 1999-46730	19990528
EP 1154793	A1	20011121	EP 1999-930126	19990528
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002537355	T2	20021105	JP 2000-600688	19990528

PRIORITY APPLN. INFO.: US 1999-122172P P 19990226
WO 1999-US11906 W 19990528

AB Compns. are provided which include bioadhesives in combination with adjuvants and antigens for mucosal delivery. Also provided are methods of making the compns., as well as methods of immunization using the same.

L34 ANSWER 10 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:569733 HCAPLUS
DOCUMENT NUMBER: 133:278499
TITLE: Snapshots of usher
ordered pilus asse
AUTHOR(S): Saulino, Evan T.;
CORPORATE SOURCE: Department of Mol
Pathogenesis, Was
Medicine, St. Lou
SOURCE: Proceedings of t
United States of

CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Type 1 pilus biogenesis was used as a paradigm to investigate ordered macromol. assembly at the outer cell membrane. The ability of Gram-neg. bacteria to secrete proteins across their outer membrane and to assemble adhesive macromol. structures on their surface is a defining event in pathogenesis. We elucidated genetic, biochem., and biophys. requirements for assembly of functional type 1 pili. We discovered that the minor **pilus protein FimG** plays a crit. role in nucleating the formation of the adhesive tip fibrillum. Genetic methods were used to trap pilus subunits during their translocation through the outer membrane usher protein, providing data on the structural interactions that occur between subunit components during type 1 pilus formation. Electron microscopic and biochem. analyses of these stepwise assembly intermediates demonstrated that translocation of pilus subunits occurs linearly through the usher's central channel, with formation of the pilus helix occurring extracellularly. Specialized pilin subunits play unique roles both in this multimerization and in the final ultrastructure of the adhesive pilus.
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 11 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:76122 HCAPLUS
DOCUMENT NUMBER: 133:57208
TITLE: Infection control strategy against periodontal pathogens by salivary IgA
AUTHOR(S): Honma, Kiyonobu; Okuda, Katsuji
CORPORATE SOURCE: Oral Biol., State Univ. New York at Buffalo, NY, USA
SOURCE: Shika Gakuho (1999), 99(11), 965-971
CODEN: SHGKA3; ISSN: 0037-3710
PUBLISHER: Tokyo Shika Daigaku Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with 15 refs. **Vaccines** for periodontitis are discussed. A specific **antibody** is produced by DNA **vaccine** coding for arginine-specific cysteine protease of Porphyromonas gingivalis, and infection-protecting ability is under study. A fused protein of Porphyromonas gingivalis **pilus protein** with M6 surface protein of Streptococcus gordonii is expressed on the surface of S. gordonii, which induces **antibody** against P. gingivalis **pilus protein** and hence inhibits adhesion of the pathogen to oral mucosa.

L34 ANSWER 12 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:775109 HCAPLUS
DOCUMENT NUMBER: 132:148835
TITLE: The HRP pilus and extracellular proteins of Erwinia amylovora
AUTHOR(S): Hu, W.; Jin, Q.; Hart, P.; Jones, A.; He, S. Y.; Beer, S. V.
CORPORATE SOURCE: Department of Botany, Michigan State University, East Lansing, MI, 48824, USA
SOURCE: Acta Horticulturae (1999), 489(Eighth International Workshop on Fire Blight, 1998), 315-319
CODEN: AHORA2; ISSN: 0567-7572
PUBLISHER: International Society for Horticultural Science
DOCUMENT TYPE: Journal

LANGUAGE: English
AB Erwinia amylovora is the causal agent of fire blight on apple and pear trees. It elicits a hypersensitive response (HR) on nonhost plant species, such as tobacco. The long-term goal of this project is to produce fire-blight-resistant apple plants expressing **antibody** genes that target key extracellular pathogenicity proteins of E. amylovora. Toward this goal, the authors have characterized pathogenicity-assocd. extracellular proteins and macromol. structures of E. amylovora. E. amylovora secreted six major extracellular proteins in hrp-inducing broth culture. The extracellular appearance of at least three of these was hrp dependent. One of the secreted proteins had an apparent mol. wt. (MW) of 6.5 kDa, which is consistent with the predicted MW of HrpA of E. amylovora. Another hrp-dependent secreted protein had a mol. wt. of 198 kDa, which is consistent with the expected MW of the extracellular disease-specific protein DspE of E. amylovora. The third protein had a MW of 48 kDa and reacted with a harpin **antibody**. Polyclonal **antibodies** against HrpA and DspE have been produced in mice and the scFv (single chain fragment variable) **antibody** genes have been isolated from immunized mice. Finally, E. amylovora produced a pilus structure on hrp-inducing agar medium. This pilus structure was not produced when E. amylovora was grown on the hrp-repressing Luria-Bertani medium.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 13 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1999:525483 HCAPLUS
DOCUMENT NUMBER: 131:268632
TITLE: Structural basis of chaperone function and pilus biogenesis
AUTHOR(S): Sauer, Frederic G.; Fitterer, Klaus; Pinkner, Jerome S.; Dodson, Karen W.; Hultgren, Scott J.; Waksman, Gabriel
CORPORATE SOURCE: Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO, 63110, USA
SOURCE: Science (Washington, D. C.) (1999), 285(5430), 1058-1061
CODEN: SCIEAS
PUBLISHER: American Assc ice
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Many Gram-neg. pathogens assembl verse adhesive pili on their surfaces l **Ig**-like periplasmic chaperones e: a large protein complex that fac ply of sub-units across the outer membr apD- **PapK** chaperone-subunit complex, reveals that the chaperone funct d to complete the **Ig**-like fold of the donor strand complementation. T complex also suggests that during pilus biogenesis, every subunit completes the **Ig**-like fold of its neighboring subunit via a mechanism termed donor strand exchange.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 14 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:527193 HCAPLUS
DOCUMENT NUMBER: 129:166193

TITLE: Therapeutic **treatment** and **prevention** of infections with a bioactive material encapsulated within a biodegradable-biocompatible polymeric matrix
INVENTOR(S): Setterstrom, Jean A.; Van Hamont, John E.; Reid, Robert H.; Jacob, Elliot; Jeyanthi, Ramasubbu; Boedeker, Edgar C.; McQueen, Charles E.; Tice, Thomas R.; Roberts, F. Donald; Friden, Phil
PATENT ASSIGNEE(S): United States Dept. of the Army, USA; Van Hamont, John E.; et al.
SOURCE: PCT Int. Appl., 363 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 15
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9832427	A1	19980730	WO 1998-US1556	19980127
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 6309669	B1	20011030	US 1997-789734	19970127
AU 9863175	A1	19980818	AU 1998-63175	19980127

PRIORITY APPLN. INFO.:

US 1997-789734	A	19970127
US 1984-590308	B1	19840316
US 1992-867301	A2	19920410
US 1995-446148	A2	19950522
US 1995-446149	B2	19950522
US 1996-590973	B2	19960124
WO 1998-US1556	W	19980127

AB Novel burst-free, sustained release biocompatible and biodegradable microcapsules are disclosed which can be programmed to release their active core for variable durations ranging from 1-100 days in an aq. physiol. environment. The microcapsules are comprised of a core of polypeptide or other biol. active agent encapsulated in a matrix of poly(lactide/glycolide) copolymer, which may contain a pharmaceutically acceptable adjuvant, as a blend of upcapped free carboxyl end group and end-capped forms ranging in ratios from 100/0 to 1/99.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 15 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1998:191022 HCAPLUS
DOCUMENT NUMBER: 128:305997
TITLE: Bacterial adhesion pili are heterologous assemblies of similar subunits
AUTHOR(S): Bullitt, Esther; Makowski, Lee
CORPORATE SOURCE: Department of Biophysics, Boston University School of Medicine, Boston, MA, 02118-2526, USA
SOURCE: Biophysical Journal (1998), 74(1), 623-632
CODEN: BIOJAU; ISSN: 0006-3495
PUBLISHER: Biophysical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB P-pili on uropathogenic bacteria are 68-.ANG.-diam. rods typically 1 .mu.m in length. These structures project from the outer membrane of Escherichia coli, and contain on their distal tip a thin fibrillum, 25 .ANG. in diam. and 150 .ANG. long, displaying an adhesin protein responsible for the binding of the bacterium to the surface of epithelial cells lining the urinary tract. Operationally, it is possible to identify three morphol. distinct states of the 68-.ANG.-diam. P-pili rods, based on the degree of curvature each can adopt. These states are designated straight, curved, and highly curved. The rods can also be unwound to form thin threads that are very similar to the tip fibrillae. Electron microscope data are used to distinguish among these four morphol. states and to define limits on the shapes of the **pilus proteins** . The mech. properties of the **PapA** polymers are assessed, and implications of rod polymorphism for pilus function are discussed. A wide variety of data are considered in light of the possibility that all pilins are similar in mol. architecture, with specific differences designed to optimize their specialized functions in the pilus assembly.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 16 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:613338 HCAPLUS
DOCUMENT NUMBER: 127:290319
TITLE: Membrane cofactor protein (MCP or CD46) is a cellular pilus receptor for pathogenic Neisseria
AUTHOR(S): Kallstrom, Helena; Liszewski, M. Kathryn; Atkinson, John P.; Jonsson, Ann-Beth
CORPORATE SOURCE: Microbiology and Tumorbiology Center, Karolinska Institute, Stockholm, S-171 77, Swed.
SOURCE: Molecular Microbiology (1997), 25(4), 639-647
CODEN: MOMIEE; ISSN: 0950-382X
PUBLISHER: Blackwell
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pili of Neisseria gonorrhoeae and Neisseria meningitidis mediate binding of the bacteria to human cell-surface receptors. The authors found that purified pili bound to a 55-60-kDa doublet band on SDS-PAGE of sepd. human epithelial cell exts. This is a migration pattern typical of membrane cofactor protein (MCP or CD46). MCP is a widely distributed human complement regulatory protein. Attachment of the bacteria to epithelial cells was blocked by polyclonal and monoclonal **antibodies** directed to MCP, suggesting that this complement regulator is a receptor for piliated Neisseria. The authors proved this hypothesis by demonstrating that piliated, but not non-piliated, gonococci bound to CHO cells transfected with human MCP-cDNA. They also demonstrated a direct interaction between purified recombinant MCP and piliated Neisseria. Finally, recombinant MCP protein produced in E. coli inhibited attachment of the bacteria to target cells. Thus, MCP is a human cell-surface receptor for piliated pathogenic Neisseria.

L34 ANSWER 17 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1997:426545 HCAPLUS
DOCUMENT NUMBER: 127:173543
TITLE: Identification and localization of the Tgl protein, which is required for Myxococcus xanthus social motility
AUTHOR(S): Rodriguez-Soto, Jorge P.; Kaiser, Dale
CORPORATE SOURCE: Dep. Biochem., Stanford Univ. Sch. Med., Stanford, CA, 94305-5427, USA
SOURCE: Journal of Bacteriology (1997), 179(13), 4372-4381

CODEN: JOBAAY; ISSN: 0021-9193
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Tgl protein is required for the prodn. of the type IV pili found at a pole of the Myxococcus xanthus cell. These pili are essential for social motility. Evidence is presented that Tgl is a membrane protein, based on expts. with polyclonal **antibody** specific for Tgl that was raised against the fusion proteins .beta.-galactosidase-Tgl and TrpE-Tgl. Immunoaffinity-purified **antibody** reacted with a protein in M. xanthus having an apparent mol. mass of 27.5 kDa as measured by sodium dodecyl sulfate-polyacrylamide gel electrophoresis, while the sequence of the tgl gene translates into a polypeptide of 27 kDa. Although these nos. are close, it is likely that the primary tgl translation product is **processed** and modified in M. xanthus. The N terminus has a signal peptidase II recognition sequence, cleavage of which is expected to remove 19 amino acid residues. When the tgl gene is expressed in Escherichia coli, the protein product consistently migrates faster in the gel than mature Tgl expressed in M. xanthus, suggesting a second modification by addn. which slows migration of the protein from M. xanthus. Tgl, as detected by its specific **antibody**, sediments with the membrane fraction of cells. It can be extd. with detergents but not with salt or by the addn. of chelators for divalent cations. In an equil. gradient, Tgl bands at the buoyant d. of membranes and with the NADH-oxidase activity. Intact cells failed to bind anti-Tgl **antibody**, and less than 2% of the total Tgl is released in sol. form from the periplasm. Yet, cells that had been osmotically shocked and **treated** with paraformaldehyde were able to react with the specific **antibody**-a reaction absent from cells with a deletion of the tgl transcription unit. Assuming that osmotic shock disrupts the outer membrane, the fractionation and localization data imply that Tgl is attached to the inner or outer membranes, from which it is exposed to the intermembranous space. Tgl is necessary for synthesis of pili in M. xanthus and is the only **pilus protein** that can be donated by other cells (stimulation). Tgl contains six tandem copies of the tetratrico peptide repeat structural motif. Its membrane localization, capacity for stimulation, and content of tetratrico structural repeats together suggest that Tgl may be necessary for the assembly of pilin subunits into filaments.

L34 ANSWER 18 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1996:512600 HCAPLUS
DOCUMENT NUMBER: 125:162920
TITLE: Assembly prote[illegible] of CS1 pili of enterotoxigenic Escherichia c[illegible]
AUTHOR(S): Sakellaris, H[illegible] R.
CORPORATE SOURCE: School of Med[illegible] 30322, USA
SOURCE: Molecular Mic[illegible] CODEN: MOMIEE,
PUBLISHER: Blackwell
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Some strains of enterotoxigenic E[illegible] diarrheal disease produce a class[illegible] d CS1. For the assembly of the major-pil[illegible] of four linked genes, cooB, A, C, and D, [illegible] have detd. the subcellular localization of CooB, C and D, and investigated the mol. interactions of these proteins using specific antisera. CooD appears to be an integral **pilus protein** because it co-purifies

with, and is strongly assocd. with, CS1 pili. In keeping with its role as an assembly protein, the CooD minor pilin (when overexpressed in CS1-piliated strains) was detected in periplasmic intermol. complexes with the major-pilin subunit CooA. CooB is an assembly protein found exclusively in the periplasma of CS1-piliated strains. CooB also forms periplasmic intermol. complexes with CooA, but does not constitute part of the final pilus structure. Immunoblot anal. of cell fractions showed that CooC is an outer membrane protein of CS1-piliated E. coli. Based on this information, we have proposed a model for CS1-pilus assembly which is very similar to the model for polymn. of the **PapA** pilin of uropathogenic E. coli. As the assembly proteins of Pap and CS1 pili are structurally unrelated, this may represent a case of convergent evolution.

L34 ANSWER 19 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:970077 HCAPLUS
DOCUMENT NUMBER: 124:53214
TITLE: Intraduodenal immunization with microencapsulated CFA/II induces a delayed, anti-CFA/II, IgG **antibody**-secreting spleen cell response
AUTHOR(S): Sau, Keya; Reid, Robert H.; McQueen, Charles; Boedeker, Edgar C.; Nellore, R.; Dalal, P.; Bhagat, H.R.
CORPORATE SOURCE: Department of Gastroenterology, Walter Reed Army Institute of Research, Washington, DC, 20307-5100, USA
SOURCE: Advances in Experimental Medicine and Biology (1995), 371B, 1469-74
CODEN: AEMBAP; ISSN: 0065-2598
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Spleen cells of immunized animals contained cells which were actively secreting IgG specifically against the CFA/II **pilus proteins**. Use of the microspheres **prevents** the adverse of the stomach contents on the proteins.

L34 ANSWER 20 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1995:610673 HCAPLUS
DOCUMENT NUMBER: 123:31234
TITLE: Recombinant pilC protein for use in antibacterial **vaccines**
INVENTOR(S): Meyer, Thomas Franz Ferdinand; Rudel, Thomas; Rylf, Roland Richard; Scheuerpflug, Ina Baerbel
PATENT ASSIGNEE(S): Max-Planck-Gesellschaft zur Foerderung der Wissenschaften EV, Germany
SOURCE: Ger., 30 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4336530	C1	19950413	DE 1993-4336530	19931026
WO 9511919	A2	19950504	WO 1994-EP3494	19941025
WO 9511919	A3	19950713		
W: AU, CA, CN, JP, US, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9479398	A1	19950522	AU 1994-79398	19941025
EP 725792	A1	19960814	EP 1994-930216	19941025
R: AT, BE, CH, DE, DK, ES, FR, GB, IE, IT, LI, NL, SE				

JP 09507745	T2	19970812	JP 1994-512402	19941025
US 6268171	B1	20010731	US 1996-637732	19960628
PRIORITY APPLN. INFO.:			DE 1993-4336530 A	19931026
			WO 1994-EP3494 W	19941025

AB A recombinant protein with the biol. activity of pilC protein is prepd. for use as a **vaccine** against pathogenic bacteria bearing type 4 pili, esp. Neisseria gonorrhoeae or N. meningitidis, or for prepn. of **antibodies** against these bacteria. The phase-variable signal peptide-encoding region of the recombinant gene encoding the protein, which contains a homopolymeric nucleotide sequence, is modified so that expression of the gene in the host cell is not influenced by phase variation by either (a) altering the homopolymeric sequence to an invariable heteropolymeric sequence or (b) replacing the phase-variable signal peptide-encoding region with a non-phase-variable nucleotide sequence which encodes a signal peptide compatible with secretion of the PilC protein. Thus, a bank of plasmids contg. N. gonorrhoeae genomic DNA was screened with appropriate probes for isolation of plasmids contg. the pilC2 gene. The homopolymeric G13 sequence in the isolated pTR27 plasmid was altered by site-directed mutagenesis with PCR, and the resulting non-phase-variable sequence was rendered inducible with iso-Pr .beta.-D-thiogalactoside by ligation to promoter Ptrc and introduced into pilin-free N. gonorrhoeae N174 by conjugation for overexpression of the recombinant pilC2 gene. The pilC protein was isolated by Ni chelate affinity chromatog. PilC receptors were detected on human epithelial cells by binding to the cells of fluorescent particles covalently linked to pili of N. gonorrhoeae; free pilC protein inhibited binding of several Neisseria strains to the cells.

L34 ANSWER 21 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:	1995:398130 HCAPLUS
DOCUMENT NUMBER:	122:182564
TITLE:	Detection of attachment of enterotoxigenic Escherichia coli (ETEC) to human small intestinal cells by enzyme immunoassay
AUTHOR(S):	Mynott, Tracey L.; Luke, Richard K. J.; Chandler, David S.
CORPORATE SOURCE:	School of Agriculture, La Trobe University, Bundoora, Victoria, 3085, Australia
SOURCE:	FEMS Immunology and Medical Microbiology (1995), 10(3-4), 207-18 CODEN: FIMIEV; ISSN: 0928-8244
PUBLISHER:	Elsevier
DOCUMENT TYPE:	Journal
LANGUAGE:	English

AB Simple immunoassays were developed to study the binding between enterocytes of the small intestine and other cell types, and enterotoxigenic Escherichia coli (ETEC). CFA/I or CFA/II **pilus protein** or CFA-pos. E. coli bacteria were immobilized in wells of microtiter plates and incubated with vesicles or crude mucus prepd. from human brush border enterocytes. Binding of the cell prepns. was detected by adding specific rabbit anti-brush border IgG followed by urease-labeled goat anti-rabbit IgG and urea substrate. The binding of purified CFA/I to human or rabbit small intestine, human oral epithelial cells or Caco-2 cells was detected with specific anti-CFA/I IgG. Both human brush border and mucus-derived prepns. were able to attach to ETEC. The binding was CFA-specific and strong enough to withstand several washings. In contrast, CFA/I did not bind to small intestinal cells of non-human small intestinal origin, indicating that there may be important differences in affinity between receptors present on human small intestinal cells and cells of non-human small intestinal origin. **Antibodies** directed

against human small intestinal and non-small intestinal cells did not cross-react with either prepn., indicating that receptors between these different cell sources are different. The EIA proved useful during the identification of a newly-recognized 15 kDa bacterial surface component of ETEC strain H10407P, which may function as a putative attachment factor. The EIAs developed in this study were easy to perform and multiple tests could be performed on small samples, including biopsy samples obtained during endoscopy.

L34 ANSWER 22 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1994:3130 HCAPLUS
DOCUMENT NUMBER: 120:3130
TITLE: Structural basis of pilus subunit recognition by the PapD chaperone
AUTHOR(S): Kuehn, Meta J.; Ogg, Derek J.; Kihlberg, Jan; Slonim, Lynn N.; Flemmer, Katarina; Bergfors, Terese; Hultgren, Scott J.
CORPORATE SOURCE: Dep. Mol. Microbiol., Washington Univ., St. Louis, MO, 63110, USA
SOURCE: Science (Washington, DC, United States) (1993), 262(5137), 1234-41
CODEN: SCIEAS; ISSN: 0036-8075
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The assembly of different types of virulence-assocd. surface fibers called pili in Gram-neg. bacteria requires periplasmic chaperones. PapD is the prototype member of the periplasmic chaperone family, and the structural basis of its interactions with pilus subunits was investigated. Peptides corresponding to the carboxyl terminus of pilus subunits bound PapD and blocked the ability of PapD to bind to the pilus **adhesin** **PapG** in vitro. The crystal structure of PapD complexed to the **PapG** carboxyl-terminal peptide was detd. to 3.0 .ANG. resoln. The peptide bound in an extended conformation with its carboxyl terminus anchored in the interdomain clef[illegible]f the chaperone via hydrogen bonds to invariant chaperone residues Ar[illegible] main chain hydrogen bonds and contacts between hydrophobi[illegible]nd the chaperone stabilized the complex and may [illegible]city. Site-directed mutations in Arg[illegible] PapD to bind pilus subunits and med[illegible]ation that the PapD-peptide crystal [illegible] part of the PapD-subunit interactic[illegible]

L34 ANSWER 23 OF 46 HCAPLUS COP[illegible]
ACCESSION NUMBER: 1993:1545
DOCUMENT NUMBER: 118:1545[illegible]
TITLE: Oral-int[illegible]
caused b[illegible]itigens
encapsulated with[illegible]ble
microspheres
INVENTOR(S): Reid, Robert H.; Jarboe, Daniel; Cassels[illegible]ederick J.; Boedeker, Edgar C.; Setterstrom, Jean A.
PATENT ASSIGNEE(S): United States Dept. of the Army, USA
SOURCE: PCT Int. Appl., 118 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 15
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

WO 9219263	A1	19921112	WO 1991-US3328	19910513
W: AU, CA, FI, JP, NL, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
AU 9183036	A1	19921221	AU 1991-83036	19910513
PRIORITY APPLN. INFO.:			US 1991-690485 A	19910424
			WO 1991-US3328 A	19910513

AB An oral-intestinal **vaccine** against infections by enteropathogenic bacteria comprises DL-lactide-glycolide copolymer-encapsulated AF/R1 pilus of Escherichia coli RDEC-1 attachment, or similarly-encapsulated antigenic synthetic peptides contg. (FA/I (colonization factor antigen I) **pilus protein** T-cell or B-cell epitopes. Intraduodenal **vaccination** with the DL-lactide-glycolide copolymer-encapsulated AF/R1 pilus protected habits against diarrhea caused by E. coli RDEC-1.

L34 ANSWER 24 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1993:75674 HCAPLUS
DOCUMENT NUMBER: 118:75674
TITLE: Interactive surface in the PapD chaperone cleft is conserved in pilus chaperone superfamily and essential in subunit recognition and assembly
AUTHOR(S): Slonim, Lynn N.; Pinkner, Jerome S.; Branden, Carl Ivar; Hultgren, Scott J.
CORPORATE SOURCE: Sch. Med., Washington Univ., St. Louis, MO, 63110, USA
SOURCE: EMBO Journal (1992), 11(13), 4747-56
CODEN: EMJODG; ISSN: 0261-4189
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The assembly of adhesive pili in Gram-neg. bacteria is modulated by specialized periplasmic chaperone systems. PapD is the prototype member of the superfamily of periplasmic pilus chaperones. Previously, the alignment of chaperone sequences superimposed on the three dimensional structure of PapD revealed the presence of invariant, conserved and variable amino acids. Representative residues that protruded into the PapD cleft were targeted for site directed mutagenesis to investigate the **pilus protein** binding site of the chaperone. The ability of PapD to bind to fiber-forming pilus subunit proteins to **prevent** their participation in misassembly interactions depended on the invariant, solvent-exposed arginine-8 (R8) cleft residue. This residue was also essential for the interaction between PapD and a minor pilus adaptor protein. A mutation in the conserved methionine-172 (M172) cleft residue abolished PapD function when this mutant protein was expressed below a crit. threshold level. In contrast, radical changes in the variable residue glutamic acid-167 (E167) had little or no effect on PapD function. These studies provide the first mol. details of how a periplasmic pilus chaperone binds to nascently translocated pilus subunits to guide their assembly into adhesive pili.

L34 ANSWER 25 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1992:233004 HCAPLUS
DOCUMENT NUMBER: 116:233004
TITLE: Human tracheobronchial mucin: purification and binding to Pseudomonas aeruginosa
AUTHOR(S): Reddy, Molakala S.
CORPORATE SOURCE: Sch. Dent. Med., State Univ. New York, Buffalo, NY, 14214, USA
SOURCE: Infection and Immunity (1992), 60(4), 1530-5
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Colonization of the respiratory tract with P. aeruginosa is a serious problem in cystic fibrosis and seriously ill hospitalized **patients** . Human tracheobronchial mucin (HTBM), the major glycoprotein of human tracheobronchial secretions, is known to interact with this pathogen, which may then be cleared by mucociliary action. However, the mechanism of interaction is not known. To understand this process, pure HTBM was isolated from tracheobronchial secretions of a laryngectomized man. Following initial fractionation on Sepharose CL-2B, the HTBM-contg. fraction was subjected to reductive methylation and then gel filtration. Pure HTBM was employed in an overlay binding assay to identify the bacterial adhesin(s) and mucin receptors that participate in mucin-P. aeruginosa interactions. An .apprx.16-kDa **nonpilus protein** component(s) of P. aeruginosa was the adhesin(s) for HTBM. The mucin receptor for the 16-kDa component(s) was found in the peptide moiety. This study confirms that P. aeruginosa utilizes the nonpilus adhesin(s) to bind to HTBM. Identification of the specificity of the HTBM-P. aeruginosa interactions can lead to a better understanding of the predominance of P. aeruginosa colonization in individuals with cystic fibrosis.

L34 ANSWER 26 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1992:231492 HCAPLUS
DOCUMENT NUMBER: 116:231492
TITLE: Production of a conserved adhesin by the human gastroduodenal pathogen Helicobacter pylori
AUTHOR(S): Doig, Peter; Austin, John W.; Kostrzynska, Magdalena; Trust, Trevor J.
CORPORATE SOURCE: Dep. Biochem. Microbiol., Univ. Victoria, Victoria, BC, V8W 3P6, Can.
SOURCE: Journal of Bacteriology (1992), 174(8), 2539-47 CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An adhesin protein with an approx. subunit mol. wt. of 19,600 was purified from H. pylori. The protein was loosely assocd. with the cell surface and was removed by gentle stirring or shearing. Released aggregates of the 19.6-kDa protein were removed from suspension by ultracentrifugation and sepd. from contaminating membranes by washing in 1.0% SDS. The SDS-insol. protein was purified further by Mono Q anion-exchange column chromatog. Electron microscopy of the purified adhesin demonstrated that it formed amorphous aggregates similar to the material attached to the bacterial cells and that the aggregates were morphol. distinct from typical fimbriae. Western blot (immunoblot) anal. with antiserum raised against the purified protein from 1 strain reacted with a protein with a similar subunit mol. wt. present in all 9 strains of H. pylori examd., but the protein was not present in other Helicobacter spp. examd. The N-terminal sequences of the 19.6-kDa protein purified from 3 different strains of H. pylori were identical for the 1st 28 amino acids, with the 10 amino-terminal residues showing limited sequence homol. with the TcpA **pilus protein** of Vibrio cholerae. The H. pylori 19.6-kDa protein assocd. both with human and rabbit erythrocytes and with human buccal epithelial cells. Polystyrene microspheres coated with the protein agglutinated human, horse, and rabbit erythrocytes, suggesting that this protein sp. could mediate adhesion between H. pylori and eukaryotic cells. This ability to act as an adhesin may make this protein an important virulence factor for H. pylori and hence a potential target for a **vaccine** and therapy.

L34 ANSWER 27 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1990:529112 HCAPLUS
DOCUMENT NUMBER: 113:129112
TITLE: The pili of Aeromonas hydrophila: identification of an environmentally regulated "mini pilin"
AUTHOR(S): Ho, Alice Suk Yue; Mietzner, Timothy A.; Smith, Alan J.; Schoolnik, Gary K.
CORPORATE SOURCE: Dep. Microbiol. Immunol., Stanford Univ., Stanford, CA, 94305, USA
SOURCE: Journal of Experimental Medicine (1990), 172(3), 795-806
CODEN: JEMEAV; ISSN: 0022-1007
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ultrastructural studies of A. hydrophila AH26 revealed 2 distinctive pilus types: straight pili appear as brittle, rod-like filaments, whereas flexible pili are supple and curvilinear. Straight pili are produced constitutively under all tested conditions of growth. In contrast, the expression of flexible pili is regulated by phys. and chem. variables, being produced at 22 vs. 37.degree., in a liq. vs. a solid medium, and when the availability of free Fe is reduced by the presence of deferoxamine mesylate. Both **pilus proteins** were purified and biochem. and functionally characterized. The major repeating subunit of the straight pilus is a 17,000-mol.-wt. polypeptide with amino acid sequence homol. with Escherichia coli type 1 and Pap pili. The flexible pilus filament is a homopolymer composed of a novel 46 amino acid polypeptide. Resistance of the flexible pilus filament to disaggregation using various chem. **treatments** was demonstrated; its stability as a polymer and its apparent mech. strength seem to be conferred by a 20-amino-acid hydrophobic, COOH-terminal domain. Purified straight pili lack hemagglutinating function. In contrast, purified flexible pili cause the agglutinin of human, guinea pig, ovine, bovine, and avian erythrocytes, although this property could only be demonstrated in the presence of divalent cations and was most evident at 4 vs. 22.degree.. These results suggest that the pathogenic and ecol. roles of the flexible pilus are related to this species' existence as a free-living organism in aquatic environments and its ability to cause infections, both in cold-blooded vertebrates and the human intestine.

L34 ANSWER 28 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:167539 HCAPLUS
DOCUMENT NUMBER: 110:167539
TITLE: Cloning of TcpA pilus gene of Vibrio cholerae and method for producing cholera **vaccine** from V. cholerae
INVENTOR(S): Mekalanos, John J.; Taylor, Ronald K.
PATENT ASSIGNEE(S): Harvard College, USA
SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8808431	A1	19881103	WO 1988-US1409	19880429
W: AU, DK, FI, HU, JP, NO				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
AU 8817257	A1	19881202	AU 1988-17257	19880429
AU 629793	B2	19921015		

EP 358692	A1	19900321	EP 1988-904351	19880429
EP 358692	B1	19980603		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 02503914	T2	19901115	JP 1988-504162	19880429
JP 2777894	B2	19980723		
HU 53915	A2	19901228	HU 1988-3510	19880429
HU 205372	B	19920428		
US 5098998	A	19920324	US 1988-188016	19880429
AT 166880	E	19980615	AT 1988-904351	19880429
US 5330753	A	19940719	US 1992-855809	19920323
PRIORITY APPLN. INFO.:			US 1987-43907	19870429
			US 1988-188016	19880429
			WO 1988-US1409	19880429

AB The tcpA (toxin-coregulated pilus) gene of V. cholerae is cloned and expressed in microorganisms. A method for stimulating prodn. of TcpA, the protein product of tcpA, as well as the cholera toxin B subunit during culturing of V. cholerae can be used to provide live, killed-cell, or subunit **vaccines** against cholera. The transposon deriv. TnphoA was used to identify the tcpA gene in V. cholerae and to aid in the cloning of the tcpA-phoA chimeric gene formed by insertion of TnphoA into the bacterial chromosome. This chimeric gene was then employed in identification and cloning of the complete tcpA gene. This gene complements tcpA mutants and encodes a 20.5 kilodalton protein. E. coli or Salmonella typhimurium transformed with the plasmid carrying this gene (pCS12G7) produce a protein identical in size and immunol. properties as TcpA. To produce **vaccines**, V. cholerae htx mutants deleted for the cholera toxin A subunit are cultured in medium contg. Tryptone, yeast ext., and NaCl, pH 6.5, at 25.degree. with moderate aeration (0.5-1 L/min). These conditions result in hyperpilation and overprodn. of the cholera toxin B subunit.

L34 ANSWER 29 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1989:167053 HCAPLUS
DOCUMENT NUMBER: 110:167053
TITLE: Regulatory genes in the thermoregulation of Escherichia coli pili gene transcription
AUTHOR(S): Goeransson, Mikael; Forsman, Kristina; Uhlin, Bernt Eric
CORPORATE SOURCE: Dep. Microbiol., Univ. Umeaa, Umeaa, S-901 87, Swed.
SOURCE: Genes & Development (1989), 3(1), 123-30
CODEN: GEDEEP; ISSN: 0890-9369
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Expression of several different pilus adhesins by E. coli is subject to thermoregulation. The surface-located fimbriae are present during growth at 37.degree. but are not present at lower temps., such as 25.degree.. A mechanism, the role of different gene cluster (pap) from a uropathoge promoter cloning, mRNA anal., a trans, the papI gene was identified as the level of pilus adhesin gene tran pilus subunit gene (**papA**) and several **protein** cistrons appeared to be c papB and papI gene products. Con regions indicated that none of th thermosensor. The chromosomal rpo did not appear to be required for pap tran thermoregulation of pilus gene transcription must be d from that of the heat shock regulon. By overexpressing the papI gene product from an expression

plasmid in trans, the temp. regulation could be circumvented and prodn. of pilus adhesin at low temp. could be turned on. These results suggest that the level of mRNA encoding the PapI activator is limiting at low growth temps. and that thermoregulation is due to a determinant in the papI-papB intercistronic region.

L34 ANSWER 30 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1988:564428 HCAPLUS
DOCUMENT NUMBER: 109:164428
TITLE: Structure and antigenic properties of the tip-located P **pilus proteins** of uropathogenic Escherichia coli
AUTHOR(S): Lund, Bjoern; Lindberg, Frederik; Normark, Staffan
CORPORATE SOURCE: Dep. Microbiol., Univ. Umea, Umea, S-901 87, Swed.
SOURCE: Journal of Bacteriology (1988), 170(4), 1887-94
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pyelonephritogenic E. coli frequently expresses pili which bind to Gal.alpha.(1-4)Gal receptors present on the uroepithelium. Binding of these pili is mediated by a pilus-assocd. **adhesin**, **PapG** , and not by the major subunit which constitutes the bulk of the pilus structure. The adhesin and two pilinlike proteins, **PapE** and **PapE** are present in only a few copies each at the pilus tip. Surface exposure of both **PapF** and **PapG** is required to achieve receptor-specific binding. The nucleotide sequences for the genes encoding the tip-assocd. proteins **PapE**, **PapF**, and **PapG** were detd. for two E. coli clones expressing P pili of serotypes F11 and F72 and compared with the corresponding sequences established for proteins of F13 pili. Specific antisera were used to study the cross-reactivity between the F13 tip proteins and the equiv. proteins in F11 and F72 pili. The major pilus subunit, **PapE**, varies its structure and antigenic properties among pili of different serotypes. In contrast, the **PapF** protein was highly conserved, and **PapF**-specific antisera raised against serotype F13 cross-reacted with the **PapF** proteins of both F11 and F72 serotypes. The **PapG adhesin** protein from F11 and F72 pili differed by only five amino acids out of 316 residues. However, the F13 adhesin showed only 45% amino acid homol. with the other two variants.

L34 ANSWER 31 OF 46 HCAPLUS COPYRIGH 2003 ACS on STN
ACCESSION NUMBER: 1988:201428 H
DOCUMENT NUMBER: 108:201428
TITLE: Identificatio pe-1 pilus tip adh
AUTHOR(S): Hanson, Mark
CORPORATE SOURCE: Dep. Biol. S , 15260, USA
SOURCE: Nature (Lonc), 265-8
CODEN: NATU
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The type-1 pilus of Escherichia of hair-like, multimeric adhesive organelles erence to mannose-contg. receptors on mucosal epithelia and The type-1 pilus, in 1 of several serol. variants, is expressed by nearly all E. coli strains, and its promotion of colonization by pathogenic bacteria and the protective effects of purified pilus **vaccines** suggest that it is important as a bacterial virulence factor. Both the adhesive

function and the serol. variation of the type-1 pilus have been attributed to the thousand or so pilin protein monomers making up the pilus rods. This idea has been contradicted by earlier observations on an E. coli strain expressing adhesion-defective pili. More recent genetic evidence also indicates that auxiliary **pilus proteins** are required for adhesive function. Three previously undetected integral minor proteins were identified on the type-1 pilus; 1 of them is the receptor-binding adhesin. This protein is antigenically conserved among strains with different pilin serotypes and is located at the pilus tip.

L34 ANSWER 32 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1987:530558 HCAPLUS
DOCUMENT NUMBER: 107:130558
TITLE: Fimbriae (pili): molecular basis of Pseudomonas aeruginosa adherence
AUTHOR(S): Paranchych, William; Sastry, Parimi A.; Volpel, Kathy; Loh, Bernadette A.; Speert, David P.
CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, T6G 2H7, Can.
SOURCE: Clinical and Investigative Medicine (1986), 9(2), 113-18
CODEN: CNVMDL; ISSN: 0147-958X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB P. aeruginosa Produces polar pili which promote the adherence of the organism to host mucosal surfaces and to blood-borne phagocytic cells such as polymorphonuclear leukocytes (PMNs). Pseudomonas Polar pili are flexible filaments of 52 .ANG. diam. and 2500 nm av. length. They consist of a single type of protein subunit, pilin, of mol. wt. 15,000, which is arranged in a helical mode of 5 subunits per turn and a pitch of 41 .ANG.. Purified whole pili and anti-pilus antiserum both inhibited the interaction of P. aeruginosa strains with human buccal epithelial cells and PMNs, suggesting that Pseudomonas adherence to these mammalian cells is pilus-mediated. No correlation was found between the level of cell surface fibronectin on human buccal endothelial cells and the adherence of Pseudomonas bacteria. Pseudomonas Adherence to buccal endothelial cells obtained from **patients** with cystic fibrosis was somewhat less than that to buccal endothelial cells obtained from healthy individuals. Fibronectin levels on buccal endothelial cells from **patients** with cystic fibrosis were not significantly different than those found on buccal endothelial cells from healthy individuals. Studies with peptide fragments derived from purified pili showed that only 1 peptide encompassing 23 amino acid residues at the C-terminus of the **pilus protein** inhibited in vitro adherence of P. aeruginosa PAK to human buccal cells. This peptide domain was tentatively assigned the receptor-binding function.

L34 ANSWER 33 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1987:405412 HCAPLUS
DOCUMENT NUMBER: 107:5412
TITLE: Antigenic variation of gonococcal surface proteins: effect on virulence
AUTHOR(S): Heckels, John E.; Virji, Mumtaz
CORPORATE SOURCE: Med. Sch., Univ. Southampton, Southampton, UK
SOURCE: FEMS Symposium (1986), 31(Protein-Carbohydr. Interact. Biol. Syst.), 89-93
CODEN: FEMSDW; ISSN: 0163-9188
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Antigenic shift in expression of pili and outer membrane protein II (PI)

occur during gonococcal infection. This antigenic variation influences the ability to adhere to different cell types and may permit colonization of different anatomical sites. Although PII expression is assocd. with increased killing by human polymorphonuclear leukocytes most clin. isolates express PII. With both pili and PII, the variable domains are immunodominant and little antigenic cross-reactivity is obsd. Thus antigenic shift during infection may circumvent immune differences. **Antibodies** to variable determinants are protective in model systems but only low levels of cross-reacting **antibodies** are produced in response to pili and these are directed against nonprotective epitopes.

L34 ANSWER 34 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:622615 HCAPLUS
DOCUMENT NUMBER: 105:222615
TITLE: Inhibition of K88-mediated adhesion of Escherichia coli to mammalian receptors by **antibiotics** that affect bacterial protein synthesis
AUTHOR(S): Chopra, Ian; Hacker, Keith
CORPORATE SOURCE: Med. Sch., Univ. Bristol, Bristol, BS8 1TD, UK
SOURCE: Journal of Antimicrobial Chemotherapy (1986), 18(4), 441-51
CODEN: JACHDX; ISSN: 0305-7453
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The ability of 10 inhibitors of bacterial protein synthesis to decrease adhesion of E. coli bearing K88afc fimbriae was examd. In the presence of the **antibiotics** at concns. below the min. inhibitory concn. (MIC) values, neomycin was the least effective inhibitor of adhesion and minocycline was the most active. The effect of minocycline on the synthesis of individual polypeptides encoded by the K88ac determinant was examd. in detail. The rate of synthesis of K88ac **pilus protein** in the presence of minocycline 0.75 mg/L (0.5 MIC) was less than that of total cell protein synthesis, suggesting that **pilus-protein** becomes progressively dild. in the outer membrane during exposure to this **antibiotic** concn. Furthermore, the synthesis of 2 helper polypeptides (mol. wts. of 27.5 and 27 kilodaltons), which are probably involved in secretion of K88ac **pilus protein** through the cell envelope, was particularly sensitive to minocycline. Thus, the ability of translational inhibitors to decrease K88ac-mediated adhesion probably results from direct inhibition of synthesis of fimbrial protein itself, together with inhibition of helper polypeptide synthesis.

L34 ANSWER 35 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:619918 HCAPLUS
DOCUMENT NUMBER: 105:219918
TITLE: Genetic manipulation of Escherichia coli K99 pilus production
AUTHOR(S): Newman, Karel, Jr.; Isaacson, Richard; Petre, Jean
CORPORATE SOURCE: Salsbury Lab., Inc., Charles City, IA, 50616, USA
SOURCE: Beltsville Symposia in Agricultural Research (1986), 10(Biotechnol. Solving Agric. Probl.), 307-16
CODEN: BSARDN; ISSN: 0160-3612
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A 7.15 kilobase(kb) BamHI restriction fragment contg. the gene encoding K99 pilus expression was removed from the wild-type 87.8-kb pK99 plasmid and inserted into a BamHI restriction-cleaved pBR322 recipient vehicle. The newly developed plasmid, designated pIX12, was first used to transform

recipient E. coli strain RH202 for final transfer to strain 711. The recombinant strain so developed was found to produce several-fold more **pilus protein** than the original plasmid donor. **Pilus protein** is apparently expressed at the surface of the organism, and may be readily removed with shearing forces. The resulting effluent is concd. by ultrafiltration and may be subsequently quantitated by ELISA employing either an avidin-biotin-based dual epitope recognition assay or conventional polyclonal **antibody** based assay. Product is formulated on the basis of computer generated concn. values. The resulting compns. contg. the engineered protein induced the development of maternal **antibodies** capable of protecting offspring against mortality and severe morbidity.

L34 ANSWER 36 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:422936 HCAPLUS
DOCUMENT NUMBER: 105:22936
TITLE: Adhesin antigens, **antibodies** and DNA fragment encoding the antigen, methods and means for diagnosis and immunization etc
INVENTOR(S): Lindberg, Frederik Carl Peter; Lund, Bjoern Olof; Baaga, Britt Monika; Norgren, Mari Elisabet; Goeransson, Mikael; Uhlin, Bernt Eric Anund; Normark, Jan Staffan; Lark, David Lee
PATENT ASSIGNEE(S): Syn-Tek AB, Den.
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8505037	A1	19851121	WO 1985-DK45	19850502
W: AU, DK, FI, JP, KR, NO, SU, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
AU 8542994	A1	19851128	AU 1985-42994	19850502
AU 593770	B2	19900222		
EP 179887	A1	19860507	EP 1985-902487	19850502
EP 179887	B1	19930721		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 62501355	T2	19870604	JP 1985-502188	19850502
JP 2974028	B2	19991108		
AT 91629	E	19930815	AT 1985-902487	19850502
DK 8506099	A	19851230	DK 1985-6099	19851230
DK 171258	B1	19960812		
FI 8600015	A	19860102	FI 1986-15	19860102
FI 93310	B	19941215		
FI 93310	C	19950327		
SU 1787165	A3	19930107	SU 1986-4001551	19860102
US 4795803	A	19890103	US 1986-817849	19860219
US 5804198	A	19980908	US 1995-447685	19950523
US 6291649	B1	20010918	US 1998-75396	19980511

PRIORITY APPLN. INFO.:

DK 1984-2190	A	19840502
EP 1985-902487	A	19850502
WO 1985-DK45	A	19850502
US 1986-817849	A3	19860219
US 1988-245469	B1	19880916
US 1991-678167	B1	19910328
US 1992-856829	B1	19920323

US 1993-123032 B1 19930920
US 1995-447685 A3 19950523

AB Adhesin polypeptide, an antigen constituting a minor component of the pili of pathogenic bacteria and responsible for the adhesion of these bacteria to mammalian cells, is used in prophylaxis and for prepn. of **vaccines** and of **antibodies** as diagnostic agents. Adhesin is produced free of structural components of pili by chem. synthesis or by use of recombinant DNA technol. In the latter case, its purifn. from the bacterial host is facilitated by fusion of the adhesin gene with the gene for a 2nd protein and purifn. of the encoded fused protein with methods specific for the 2nd protein, followed by optional cleavage to remove the 2nd protein. Thus, the genes for the major **pilus protein** subunit and the adhesin polypeptide were identified in a uropathogenic isolate of Escherichia coli J96, and the nucleotide sequence of adhesin DNA and the corresponding amino acid sequence for pilus adhesin were detd. A plasmid was constructed contg. adhesin DNA fused to the lacZ gene for cloning and expression in E. coli of an adhesin-.beta.-galactosidase fusion protein for use (with or without cleavage) as a **vaccine**.

L34 ANSWER 37 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:127829 HCAPLUS
DOCUMENT NUMBER: 104:127829
TITLE: Enhanced antigenicity and immunogenicity of gonococcal pilus-lipopolysaccharide conjugates
AUTHOR(S): Seid, Robert C., Jr.; Schneider, Herman; Nussbaum, Robert; Sidberry, Hazel; Sadoff, Jerald C.
CORPORATE SOURCE: Dep. Bact. Dis., Walter Reed Army Inst. Res., Washington, DC, 20307-5100, USA
SOURCE: Pathog. Neisseriae, Proc. Int. Symp., 4th (1985), Meeting Date 1984, 309-15. Editor(s): Schoolnik, Gary K. Am. Soc. Microbiol.: Washington, D. C. CODEN: 54ZAAE
DOCUMENT TYPE: Conference
LANGUAGE: English

AB A gonococcal pilus **vaccine** protein was chem. conjugated to lipopolysaccharide (LPS) derived from serum-sensitive gonococcal strain F62 and serum-resistant strain 7134. Prior to the coupling reaction, the LPSs were **treated** with alc. NaOH soln. to release ester-linked, lipid A fatty acids. The available carboxyl groups of deacylated LPS (D-LPS) were converted into N-hydroxysuccinimide-activated esters and were allowed to condense with free amino groups of gonococcal pili. As measured by the Limulus lysate assay, the D-LPS exhibited 1000-fold reduced toxicity compared with native LPS. Quant. carbohydrate anal. revealed 1.0 and 1.5 mol of F62 and 7134 D-LPS bound per pilus subunit, resp. Solid-phase RIA inhibition data revealed that conjugation restored, as well as enhanced, LPS antigenicity lost during the detoxification reaction. Also, solid-phase RIA-inhibition data indicated that the conjugates fully retained their capacity to bind with antipilus **antibody**. In complement-dependent serum bactericidal systems, the pilus-LPS conjugates, as well as D-LPS, were as effective as native LPS in inhibiting killing of gonococci. These serol. studies indicate that the chem. techniques employed did not appreciably affect **antigenic determinants** of either pili or LPS. Immunization of mice with the pilus-LPS (F62) conjugate induced an early response in anti-LPS **antibody** level similar to that of native LPS. D-LPS alone was not immunogenic. More interestingly, the pilus-LPS conjugate induced a rise in antipilus **antibody** 3-fold greater than that induced by pili alone. Mice receiving 2 injections, 1 wk apart, of the conjugate responded with a 7-fold increase in antipilus **antibody** level

which was measured 30 days after the last injection. These results clearly demonstrate that immunogenicity of both gonococcal D-LPS and pili is enhanced as a result of covalent conjugation.

L34 ANSWER 38 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:116077 HCAPLUS
DOCUMENT NUMBER: 104:116077
TITLE: **Vaccine** against urinary infection
INVENTOR(S): O'Hanley, Peter; Falkow, Stanley; Schoolnik, Gary K.; Lark, David
PATENT ASSIGNEE(S): Leland Stanford Junior University, USA
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 161095	A2	19851113	EP 1985-303016	19850429
EP 161095	A3	19870603		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4736017	A	19880405	US 1984-605287	19840430
CA 1261550	A1	19890926	CA 1985-480171	19850426
AU 8541851	A1	19851107	AU 1985-41851	19850430
AU 582578	B2	19890406		
JP 61000022	A2	19860106	JP 1985-94545	19850430

PRIORITY APPLN. INFO.: US 1984-605287 19840430
AB The Escherichia coli HU849 Gal-Gal **pilus protein** (pilin) and some of its amino acid sequences are **vaccines** against urinary infections. Thus, a **vaccine** was prepd. from E. coli HU849 pilin (amino acid sequence given) emulsified in Freund's adjuvant. The **vaccine** protected mice from urinary infection induced by E. coli J96.

L34 ANSWER 39 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1986:63068 HCAPLUS
DOCUMENT NUMBER: 104:63068
TITLE: Gonococcal pilus: genetics and structure
AUTHOR(S): So, M.; Billyard, E.; Deal, C.; Getzoff, E.; Hagblom, P.; Meyer, T. F.; Segal, E.; Tainer, J.
CORPORATE SOURCE: Dep. Mol. Biol., Scripps Clin. Res. Found., La Jolla, CA, 92037, USA
SOURCE: Current Topics in Microbiology and Immunology (1985), 118(Genet. Approaches Microb. Pathog.), 13-28
CODEN: CTMIA3; ISSN: 0070-217X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **pilus protein** of Neisseria gonorrhoeae undergoes antigenic variation. Phase and antigenic variation in the pilus system are closely related phenomena. The regulation of pilus gene expression is reminiscent of yeast mating type interconversion (i.e. the occurrence of expression sites and silent pilus sequences) and **Ig** gene rearrangements. Evidence is also presented to show that the gonococcal pilin belongs to a class or family of pilins with a common subunit structure. Thus, like the topol. of tobacco mosaic virus coat protein, pilin is predicted to be composed of a bundle of 4 antiparallel alpha helices aligned along the long axis of a .apprx.25 .times. 25 .times. 70-.ANG. mol. The gonococcal pilin also is similar in polypeptide chain

length and in the formation of a long rod-like assembled structure consisting of many identical subunits.

L34 ANSWER 40 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:450925 HCAPLUS
DOCUMENT NUMBER: 103:50925
TITLE: Pseudomonas pili. Studies on **antigenic determinants** and mammalian cell receptors
AUTHOR(S): Paranchych, William; Sastry, Parimi A.; Drake, Debra; Pearlstone, Joyce R.; Smillie, Lawrence B.
CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, Can.
SOURCE: Antibiotics and Chemotherapy (Basel) (1985), 36(Pseudomonas Aeruginosa), 49-57
CODEN: ANBCB3; ISSN: 0066-4758
DOCUMENT TYPE: Journal
LANGUAGE: English
AB P. aeruginosa PAK pili are thin 5.2 nm diam. filaments contg. a single 15-kilodalton polypeptide subunit which is 144 amino acid residues in length. Studies on pili binding to a variety of synthetic sugars representing many di- tri- and tetrasaccharides structures found in mammalian glycoproteins and glycolipids failed to reveal any significant binding activity. However, a wide spectrum of binding activities was obsd. when a variety of structural proteins and enzymes were used as binding substrates. Of 30 proteins tested, phosphorylase b, pyruvate kinase, and aldolase showed highest pilus-binding activities. Thus, the PAK pilus receptor is probably a polypeptide, rather than an oligosaccharide. Using arginine-specific cleavage to produce 4 large peptides, several proteases to produce subfragments of the large peptides, and antipilus rabbit antiserum, PAK pilin was found to contain 4 **antigenic determinants**. Epitopes near the N- and C-termini were only weakly immunogenic, whereas 2 epitopes near the center of the **pilus protein** titrated .apprx.85% of the antipilus **antibodies**. Cleavage of the **pilus protein** into smaller peptides resulted in marked decreases in the affinity of antigenic peptides for their specific **antibodies**, suggesting that the immunodominant epitopes of PAK pilin are conformation-specific.

L34 ANSWER 41 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1985:109618 HCAPLUS
DOCUMENT NUMBER: 102:109618
TITLE: On the role of pili in transformation of Neisseria gonorrhoeae
AUTHOR(S): Mathis, Linda S.; Scocca, John J.
CORPORATE SOURCE: Sch. Hgy. Public Health, Johns Hopkins Univ., Baltimore, MD, 21205, USA
SOURCE: Journal of General Microbiology (1984), 130(12), 3165-73
CODEN: JGMIAN; ISSN: 0022-1287
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Transformation of competent transformable N. gonorrhoeae F62 to streptomycin resistance was unaffected by **antibodies** directed against the **pilus protein** (pilin) of this organism. The pilin component of either crude or purified pilus prepns., sepd. by SDS gel electrophoresis and transferred to nitrocellulose, failed to bind detectable amts. of DNA; DNA binding to other gonococcal polypeptides was obsd. under these conditions. These results suggest that gonococcal pilin does not play a direct role in gonococcal transformation.

L34 ANSWER 42 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1984:83826 HCAPLUS
DOCUMENT NUMBER: 100:83826
TITLE: Enzyme-linked immunosorbent assay with a monoclonal **antibody** for detecting group A meningococcal antigens in cerebrospinal fluid
AUTHOR(S): Sugasawara, Renee J.; Prato, Catherine M.; Sippel, John E.
CORPORATE SOURCE: Berkeley, Sch. Public Health, Univ. California, Oakland, CA, 94625, USA
SOURCE: Journal of Clinical Microbiology (1984), 19(2), 230-4
CODEN: JCMIDW; ISSN: 0095-1137
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hybridomas were produced from spleen cells of BALB/c mice immunized with a membrane prepn. from Neisseria meningitidis group A strain 4402 and S194/5.XXOBU.14 myeloma cells. The hybridomas were screened for secretion of **antibodies** suitable for an ELISA diagnostic for group A meningococcal meningitis. One hybridoma **antibody**, 3G7, was directed against the **pilus protein**. This **antibody** bound to all 6 lipopolysaccharide and protein group A meningococcal of Escherichia coli, Haemophilus influenzae type b, or to .gtoreq.2 strains of Streptococcus pneumoniae, N. gonorrhoeae, and Salmonella typhi. The ELISA used an **antibody**, antigen, **antibody**-conjugate sandwich. Rabbit anti-meningococcal serum was the coating **antibody** for the **antibody** sandwich. Cerebrospinal fluids contained the bacterial antigens, and 3G7-alk. phosphatase conjugate was the detecting **antibody**. The monoclonal **antibody** conjugate ELISA system detected group A meningococcal antigens in 21 of 25 cerebrospinal fluid specimens that were pos. in an immune rabbit serum conjugate ELISA. Counterimmunoelectrophoresis detected meningococcal antigens in 16 of the same 25 cerebrospinal fluid samples.

L34 ANSWER 43 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1983:437053 HCAPLUS
DOCUMENT NUMBER: 99:37053
TITLE: Monoclonal **antibodies** against bacterial adhesins
INVENTOR(S): Sadowki, Peter L.
PATENT ASSIGNEE(S): Molecular Genetics, Inc., USA
SOURCE: Eur. Pat. Appl., 37 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 77734	A2	19830427	EP 1982-401906	19821018
EP 77734	A3	19840404		
R: BE, DE, FR, GB, IT, LU, NL				
US 4443549	A	19840417	US 1982-428622	19821007
CA 1187822	A1	19850528	CA 1982-413150	19821008
DK 8204621	A	19830420	DK 1982-4621	19821018
AU 8289454	A1	19830428	AU 1982-89454	19821018
AU 560262	B2	19870402		
JP 58099423	A2	19830613	JP 1982-182260	19821019
US 4652448	A	19870324	US 1983-558518	19831206

PRIORITY APPLN. INFO.: US 1981-312993 19811019
US 1982-428622 19821007

AB Monoclonal **antibodies** to bacterial adhesins are produced with spleen cell hybridomas. Thus, (BALB/c) mice were hyperimmunized with Escherichia coli K-99 **pilus protein**. Their spleens were macerated and the cells were fused with BALB/c myeloma cells in polyethylene glycol-contg. soln. Fused cells were selected in HAT medium and **antibody**-producing fused cells were selected by ELISA anal. The cells were grown to confluence by limiting-diln. cloning and were then implanted into mice. After ascites development was obsd., the mice were tapped. Anti-K-99 monoclonal **antibodies** were recovered from ascites fluid by centrifugation. The **antibody** protected piglets against E. coli K-99-pos. diarrhea.

L34 ANSWER 44 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1983:121572 HCAPLUS
DOCUMENT NUMBER: 98:121572
TITLE: Localization of the major **antigenic determinant** of EDP208 pili at the N-terminus of the **pilus protein**
AUTHOR(S): Worobec, Elizabeth A.; Taneja, Ashok K.; Hodges, Robert S.; Paranchych, William
CORPORATE SOURCE: Dep. Biochem., Univ. Alberta, Edmonton, AB, T6G 2H7, Can.
SOURCE: Journal of Bacteriology (1983), 153(2), 955-61
CODEN: JOBAAY; ISSN: 0021-9193
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Trypsin digestion of pilin monomers from EDP208 conjugative pili causes cleavage at lysine12 to yield an N-terminal dodecapeptide, ET1 (mol. wt. .apprx.1500), and the remaining C-terminal fragment, ER (mol. wt. .apprx.10,000). Using the amino acid sequence for ET1 provided by L. S. Frost, et al. (1983), the N-terminal dodecapeptide was chem. synthesized, conjugated to bovine serum albumin, and subjected to immunol. studies. Antisera prepd. against intact EDP208 pili as well as against the synthetic ET1-albumin conjugate were used in expts. involving an enzyme-linked immunosorbent assay and electrophoretic transfer of proteins from SDS-polyacrylamide gels to nitrocellulose sheets. Both exptl. approaches showed strong reactivity between the synthetic dodecapeptide and antiserum raised against whole pili. Antiserum raised against the synthetic peptide was reactive against intact **pilus protein**, indicating that the N-terminal dodecapeptide is an important **antigenic determinant** of the EDP208 **pilus protein**. Addnl. studies showed that the C-terminal fragment, ER, may contain 1 or 2 addnl. antigenic sites.

L34 ANSWER 45 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1982:576157 HCAPLUS
DOCUMENT NUMBER: 97:176157
TITLE: Pilus expression in Neisseria gonorrhoeae involves chromosomal rearrangement
AUTHOR(S): Meyer, Thomas F.; Mlawer, Natania; So, Magdalene
CORPORATE SOURCE: Abt. Mol. Biol., Max-Planck-Inst. Med. Forsch., Heidelberg, Fed. Rep. Ger.
SOURCE: Cell (Cambridge, MA, United States) (1982), 30(1), 45-52
CODEN: CELLB5; ISSN: 0092-8674
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The N. gonorrhoeae **pilus protein**, a major

antigenic determinant on the cell's surface, is composed of identical subunits of .apprx.18 kilodaltons and plays a role in the infectivity and virulence of the organism. The gene encoding a gonococcal **pilus protein** was cloned into Escherichia coli, and 1 of these clones was used as a probe in hybridization studies to show that conversion of the pilus-pos. to pilus-neg. state in N. gonorrhoeae involves chromosomal rearrangement. Although the **pilus protein** is produced by E. coli, it does not appear to be assembled on the surface of the cell in native form.

L34 ANSWER 46 OF 46 HCAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1980:72359 HCAPLUS
DOCUMENT NUMBER: 92:72359
TITLE: Yeast cell agglutination by purified enterobacterial pili
AUTHOR(S): Korhonen, Timo K.
CORPORATE SOURCE: Dep. Gen. Microbiol., Univ. Helsinki, Helsinki, SF-00280/28, Finland
SOURCE: FEMS Microbiology Letters (1979), 6(6), 421-5
CODEN: FMLED7; ISSN: 0378-1097
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Yeast cells were agglutinated by purified **pilus proteins** from certain strains of Escherichia coli and Salmonella typhimurium, and the responses were mannose sensitive (agglutination **prevented** or reversed by D-mannose). For both yeast cells and a variety of erythrocytes the pattern of agglutinations produced by **pilus proteins** was generally the same as that produced by whole bacteria. A strain of E. coli that induced only mannose-resistant hemagglutination had no effect on yeast cells. Yeast agglutination was assocd. with the presence of type 1 pili, which may be virulence factors; therefore, a rapid screening test for such pili is of clin. significance.

```
=> d que stat l36
L1             1 SEA FILE=REGISTRY ABB=ON  VITAXIN/CN
L2             1 SEA FILE=REGISTRY ABB=ON  "MEDI 493"/CN
L3            85 SEA FILE=HCAPLUS ABB=ON  ?PILUS?(W)?PROTEIN?
L7            11 SEA FILE=HCAPLUS ABB=ON  L3 AND (FIMH OR FIMA OR FIMG OR FIMF
                 OR PAPG OR PAPA OR PAPE OR PAPF OR PAPK)
L8             5 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ADHESIN?(4A)(FIMH OR PAPG)
L14           23 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIBOD?
L16            8 SEA FILE=HCAPLUS ABB=ON  L3 AND ?IMMUNOGLOB?
L18            6 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIGENIC?(W)?DETERMIN?
L19            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CARRIER?
L21            2 SEA FILE=HCAPLUS ABB=ON  L3 AND ?PATIENT?
L22            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (?URINARY?(W)?TRACT?(W)?INFECT?
                  OR UTI)
L24           12 SEA FILE=HCAPLUS ABB=ON  L3 AND (?TREAT? OR ?PREVENT?)
L25            2 SEA FILE=HCAPLUS ABB=ON  L24 AND (?PROCESS? OR ?PROCED?)
L26           18 SEA FILE=HCAPLUS ABB=ON  L3 AND ?VACCIN?
L28            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CHEMOTHERAP?
L30            1 SEA FILE=HCAPLUS ABB=ON  L3 AND ?CYTOPROTECT?
L31            2 SEA FILE=HCAPLUS ABB=ON  L3 AND ?ANTIBIOTIC?
L32            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (L1 OR ?VITAXIN)
L33            1 SEA FILE=HCAPLUS ABB=ON  L3 AND (L2 OR ?MEDI?(W)493)
L34           46 SEA FILE=HCAPLUS ABB=ON  (L7 OR L8 OR L14 OR L16 OR L18 OR L19
                 OR L21 OR L22 OR L24 OR L25 OR L26 OR L28 OR L30 OR L31 OR L32
                 OR L33)
L35          121 SEA L34
L36           67 DUP REMOV L35 (54 DUPLICATES REMOVED)
```

=> d ibib abs l36 1-67

L36 ANSWER 1 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-430264 [40] WPIDS
CROSS REFERENCE: 2002-627351 [67]; 2002-636514 [68]; 2003-441430 [41]; 2003-441518 [41]; 2003-598483 [56]
DOC. NO. CPI: C2003-113693
TITLE: New angiotensin peptide moiety **carrier** conjugate comprising a **carrier** and an angiotensin peptide moiety, useful for **treating** or **preventing** a disorder associated with renin-activated angiotensin, e.g. hypertension or infarction.
DERWENT CLASS: B04 D16
INVENTOR(S): BACHMANN, M; JENNINGS, G; SONDEREGGER, I
PATENT ASSIGNEE(S): (BACH-I) BACHMANN M; (JENN-I) JENNINGS G; (SOND-I) SONDEREGGER I; (CYTO-N) CYTOS BIOTECHNOLOGY AG
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003031466	A2	20030417	(200340)*	EN	49
US 2003157479	A1	20030821	(200356)		

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003031466	A2	WO 2002-EP11219	20021007
US 2003157479	A1 Provisional	US 2001-331045P	20011107
	CIP of	US 2002-50902	20020118
	Provisional	US 2002-396636P	20020719
		US 2002-289454	20021107

PRIORITY APPLN. INFO: US 2002-396637P 20020719; US 2001-326998P 20011005; US 2001-331045P 20011107; US 2002-50902 20020118; WO 2002-IB166 20020121
AN 2003-430264 [40] WPIDS
CR 2002-627351 [67]; 2002-636514 [68]; 2003-441430 [41]; 2003-441518 [41]; 2003-598483 [56]
AB WO2003031466 A UPAB: 20030903
NOVELTY - An angiotensin peptide moiety **carrier** conjugate comprising:
(a) a **carrier** with at least one first attachment site; and
(b) at least one angiotensin peptide moiety with at least one second attachment site.
DETAILED DESCRIPTION - An angiotensin peptide moiety **carrier** conjugate comprising:
(a) a **carrier** with at least one first attachment site; and
(b) at least one angiotensin peptide moiety with at least one second

attachment site.

The **carrier** comprises a core particle, and the second attachment site is capable of association through at least one covalent bond to the first attachment site to form an ordered and repetitive angiotensin peptide moiety **carrier** conjugate.

INDEPENDENT CLAIMS are also included for the following:

(1) a pharmaceutical composition comprising one or more of the conjugates above, and a pharmaceutical **carrier** or excipient;

(2) a **vaccine** composition comprising a conjugate above, and an immunological **carrier** or excipient;

(3) immunizing an animal against an angiotensin peptide by administering a conjugate or **vaccine** composition defined above; and

(4) **treating** or **preventing** a physical disorder associated with the renin-activated angiotensin system by administering a conjugate or a **vaccine** composition defined above.

ACTIVITY - Hypotensive; Cerebroprotective; Cardiant; Nephrotropic; Ophthalmological; Immunostimulant.

No biological data given.

MECHANISM OF ACTION - **Vaccine.**

Female Balb/c mice were **vaccinated** with one of the 9 angiotensin peptide derivatives coupled to Q beta capsid protein without the addition of adjuvants. 50 micro g (Q beta -Angio 1-4 **vaccine**) or 20 micro g (Q beta -angio 5-9 **vaccine**) of total protein of each sample was diluted in PBS to 200 micro 1, and injected subcutaneously on day 0 and day 14. Mice were bled retroorbitally on day 21, and their serum was analyzed using an angiotensin-specific ELISA. Results show that all **vaccinated** mice made specific IgG **antibodies** against the Angio 2 peptide as well as angiotensin I although mice immunized with the Angio 2, Angio 3 or Angio 4 peptide exhibited higher titers than those **vaccinated** with Angio 1 peptide correlating with the close similarity of the Angio 2, Angio 3 and Angio 4 peptides and angiotensin.

USE - The angiotensin peptide conjugate and compositions comprising them are useful for immunizing an animal against an angiotensin peptide, and for **treating** or **preventing** a physical disorder associated with renin-activated angiotensin system such as hypertension, stroke, infarction, congestive heart failure, kidney failure, and retinal hemorrhage (claimed). The conjugate is also useful for inducing immune responses, including producing **antibodies.**

Dwg.0/4

L36 ANSWER 2 OF 67 MEDLINE on STN DUPLICATE 1

ACCESSION NUMBER:	2003139732 MEDLINE
DOCUMENT NUMBER:	22541565 PubMed ID: 12654852
TITLE:	Vector priming reduces the immunogenicity of Salmonella-based **vaccines** in Nramp1+/+ mice.
AUTHOR:	Vindurampulle Christofer J; Attridge Stephen R
CORPORATE SOURCE:	Department of Molecular Biosciences, The University of Adelaide, Adelaide, South Australia 5005, Australia.
SOURCE:	INFECTION AND IMMUNITY, (2003 Apr) 71 (4) 2258-61. Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY:	United States
DOCUMENT TYPE:	Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:	English
FILE SEGMENT:	Priority Journals
ENTRY MONTH:	200305
ENTRY DATE:	Entered STN: 20030326 Last Updated on STN: 20030513 Entered Medline: 20030512

AB The present studies in Nramp1(-/-) BALB/c and Nramp1(+/+) CBA mice question the significance of this genotype as a determinant of the level of gut colonization following oral administration of naturally attenuated or highly virulent Salmonella strains. In line with previous results in BALB/c hosts, vector priming of CBA mice with Salmonella enterica serovar Stanley was found to significantly compromise the immunogenicity of a recombinant construct expressing a foreign **pilus protein**
.

L36 ANSWER 3 OF 67 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2002733750 MEDLINE
DOCUMENT NUMBER: 22384150 PubMed ID: 12496178
TITLE: Impact of vector priming on the immunogenicity of recombinant Salmonella **vaccines**.
AUTHOR: Vindurampulle Christofer J; Attridge Stephen R
CORPORATE SOURCE: Department of Molecular Biosciences, The University of Adelaide, Adelaide, South Australia 5005, Australia.
SOURCE: INFECTION AND IMMUNITY, (2003 Jan) 71 (1) 287-97.
Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200302
ENTRY DATE: Entered STN: 20021227
Last Updated on STN: 20030211
Entered Medline: 20030210

AB There are conflicting reports concerning the impact of prior vector priming on the immunogenicity of recombinant-Salmonella-based **vaccines**. A comparison of experimental protocols identified two variables which might account for this inconsistency: the potential of the vector strain to colonize the murine gut-associated lymphoid tissue (GALT) and the nature of the foreign antigen subsequently delivered by the recombinant Salmonella construct. The former was investigated by constructing an aroA mutant of the Salmonella enterica serovar Stanley vector previously used in our laboratory. Although the introduction of an aroA mutation had surprisingly little effect on GALT colonization, it did reduce the strength of antilipopolysaccharide (anti-LPS) **antibody** responses and the impact of vector priming. Studies were also performed to ascertain the extent to which any observed hyporesponsiveness consequent upon vector priming might be determined by the characteristics of the foreign antigen. S. enterica serovar Stanley was used to deliver either of two Escherichia coli antigens, K88 **pilus protein** or the LT-B toxin subunit, to vector-primed mice. Both serum **immunoglobulin** G (IgG) and intestinal IgA responses to K88 were completely abolished, and those to LT-B were significantly reduced, as a consequence of vector priming. When similar experiments were performed with an aroA S. enterica serovar Dublin vector, responses to K88 were significantly reduced but those to LT-B were unaffected by vector priming. Paradoxically, a priming infection with this vector induced stronger anti-LPS **antibody** responses but was less likely to elicit a state of hyporesponsiveness to subsequently presented foreign antigen. The impact of vector priming thus depends on both the Salmonella strain used and the nature of the foreign antigen, but our present data strengthen concerns that preexisting antivector immunity represents a serious threat to the Salmonella-based **vaccine** strategy.

L36 ANSWER 4 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-626749 [67] WPIDS
DOC. NO. CPI: C2002-176631

TITLE: Novel protein construct for **treating** diseases, has **pilus protein** portion comprising single **pilus protein**, linked to effector portion not having bacterial **pilus-protein** or chaperone or having **pilus protein**.

DERWENT CLASS: B04 D16

INVENTOR(S): HULTGREN, S J; LANGERMANN, S; SAUER, F G

PATENT ASSIGNEE(S): (HULT-I) HULTGREN S J; (LANG-I) LANGERMANN S; (SAUE-I) SAUER F G; (MEDI-N) MEDIMMUNE INC; (UNIW) UNIV WASHINGTON

COUNTRY COUNT: 96

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2002086037	A1	20020704	(200267)*		27
WO 2002059156	A2	20020801	(200267)	EN	

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2002086037	A1 Provisional	US 2000-257880P	20001222
		US 2001-27350	20011228
WO 2002059156	A2	WO 2001-US51037	20011220

PRIORITY APPLN. INFO: US 2000-257880P 20001222; US 2001-27350 20011228

AN 2002-626749 [67] WPIDS

AB US2002086037 A UPAB: 20021018

NOVELTY - An isolated protein construct (I) comprises a **pilus protein** portion (P1) linked to an effector portion (P2), where P1 comprises single **pilus protein** including its active fragments and is not attached to a bacterial cell, and P2 does not comprise all or part of bacterial **pilus-protein** or bacterial chaperone, or P2 comprises a **pilus protein** including its active fragments and (I) does not comprise a pilus.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an **antibody** specific for (I);

(2) preparing (I), by linking a **pilus protein** moiety, or its active fragment, to an effector moiety through a bridging structure comprising a donor strand;

(3) a composition comprising (I), where (I) is suspended in a pharmacologically acceptable **carrier**; and

(4) a **vaccine** comprising (I) suspended in a pharmacologically acceptable **carrier**.

ACTIVITY - Antibacterial.

MECHANISM OF ACTION - **Vaccine** (claimed). No supporting data given.

USE - (C) is useful for **treating** or **preventing** a disease e.g. **urinary tract infection** caused by a bacterium, particularly Escherichia coli (claimed). (I) is useful as

immunogen fused stimulate the production of **antibodies** for use in passive immunotherapy, for use as diagnostic reagents, and for use as reagents in other **processes** such as affinity chromatography. Dwg.0/8

L36 ANSWER 5 OF 67 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2002049051 EMBASE
TITLE: Molecular analyses of the natural transformation machinery and identification of pilus structures in the extremely thermophilic bacterium Thermus thermophilus strain HB27.
AUTHOR: Friedrich A.; Prust C.; Hartsch T.; Henne A.; Averhoff B.
CORPORATE SOURCE: B. Averhoff, Institut fur Genetik/Mikrobiologie, Ludwig-Maximilians-Universitat, Maria-Ward-Strasse 1a, 80638 Munich, Germany. B.Averhoff@lrz.uni-muenchen.de
SOURCE: Applied and Environmental Microbiology, (2002) 68/2 (745-755).
Refs: 58
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Thermus thermophilus HB27, an extremely thermophilic bacterium, exhibits high competence for natural transformation. To identify genes of the natural transformation machinery of T. thermophilus HB27, we performed homology searches in the partially completed T. thermophilus genomic sequence for conserved competence genes. These analyses resulted in the detection of 28 open reading frames (ORFs) exhibiting significant similarities to known competence proteins of gram-negative and gram-positive bacteria. Disruption of 15 selected potential competence genes led to the identification of 8 noncompetent mutants and one transformation-deficient mutant with a 100-fold reduced transformation frequency. One competence protein is similar to DprA of Haemophilus influenzae, seven are similar to type IV **pilus proteins** of Pseudomonas aeruginosa or Neisseria gonorrhoeae (PilM, PilN, PilO, PilQ, PilF, PilC, PilD), and another deduced protein (PilW) is similar to a protein of unknown function in Deinococcus radiodurans R1. Analysis of the piliation phenotype of T. thermophilus HB27 revealed the presence of single pilus structures on the surface of the wild-type cells, whereas the noncompetent pil mutants of Thermus, with the exception of the pilF mutant, were devoid of pilus structures. These results suggest that pili and natural transformation in T. thermophilus HB27 are functionally linked.

L36 ANSWER 6 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:151398 BIOSIS
DOCUMENT NUMBER: PREV200300151398
TITLE: Sequence analysis demonstrates conservation of **FimH** and variability of **FimA** throughout avian pathogenic Escherichia coli (APEC.
AUTHOR(S): Vandemaele, Frederic (1); Vandekerchove, Dominique; Vereecken, Monita; Derijcke, Jef; Dho-Moulin, Maryvonne; Goddeeris, Bruno (1)
CORPORATE SOURCE: (1) Laboratory of Physiology and Immunology of Domestic Animals, Catholic University Leuven, Kasteelpark Arenberg 30, 3001, Leuven, Belgium Belgium
SOURCE: Mededelingen Faculteit Landbouwkundige en Toegepaste

Biologische Wetenschappen Universiteit Gent, (2002) Vol. 67, No. 4, pp. 265-268. print.
ISSN: 1373-7503.
DOCUMENT TYPE: Article
LANGUAGE: English

L36 ANSWER 7 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-055561 [07] WPIDS
DOC. NO. CPI: C2002-015922
TITLE: New composition, useful for **vaccine** production, comprises antigen or **antigenic determinant** and non-natural molecular scaffold comprising organizer and core particle such as bacterial pilus or pilin protein.
DERWENT CLASS: B04 D16
INVENTOR(S): BACHMANN, M; DUNANT, N; LECHENER, F; SEBBEL, P; TISSOT, A; HENNECKE, F; LECHNER, F; NIEBA, L; RENNER, W A
PATENT ASSIGNEE(S): (BACH-I) BACHMANN M; (CYTO-N) CYTOS BIOTECHNOLOGY AG; (DUNA-I) DUNANT N; (LECH-I) LECHENER F; (SEBB-I) SEBBEL P; (TISS-I) TISSOT A
COUNTRY COUNT: 96
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001085208	A2	20011115	(200207)*	EN	287
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2001052458	A	20011120	(200219)		
EP 1278542	A2	20030129	(200310)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 2003054010	A1	20030320	(200323)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001085208	A2	WO 2001-IB741	20010502
AU 2001052458	A	AU 2001-52458	20010502
EP 1278542	A2	EP 2001-925778	20010502
		WO 2001-IB741	20010502
US 2003054010	A1 Provisional	US 2000-202341P	20000505
		US 2001-848616	20010504

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2001052458	A Based on	WO 2001085208
EP 1278542	A2 Based on	WO 2001085208

PRIORITY APPLN. INFO: US 2000-202341P 20000505; US 2001-848616 20010504
AN 2002-055561 [07] WPIDS
AB WO 200185208 A UPAB: 20020130

NOVELTY - A composition (I) comprising:
(a) a non-natural molecular scaffold (MS) which comprises a core particle such as a bacterial pilus or pilin protein, a recombinant form of the protein, a virus-like particle or a hepatitis B virus capsid protein, and an organizer; and
(b) an antigen or **antigenic determinant** (D),
where MS and (D) interact to form an ordered and repetitive antigen array, is new.
DETAILED DESCRIPTION - A composition (I) comprising:
(1) a non-natural molecular scaffold (MS) comprising:
(a) a bacterial pilus or pilin protein or its recombinant form;
(b) a virus-like particle which is a dimer or multimer of a polypeptide comprising amino acids 1-147 of a sequence comprising 152 amino acids fully defined in the specification as core particle or a sequence having at least 65%, preferably 95% sequence identity to the sequence;
(c) a hepatitis B virus (HBV) capsid protein comprising a sequence of 183, 185, 149 or 152 amino acids fully defined in the specification; and
(d) an organizer; and
(2) an antigen or **antigenic determinant** (D),
where MS and D interact to form an ordered and repetitive antigen array, is new.
INDEPENDENT CLAIMS are also included for the following:
(1) a composition (II) comprising a bacterial pilus or a bacterial pilin polypeptide to which an antigen or **antigenic determinant** has been attached by a covalent bond;
(2) a pharmaceutical composition (III) comprising (I) or (II);
(3) a **vaccine** composition (IV) comprising (I) or (II); and
(4) preparation of (I) or (II).
ACTIVITY - Antiarthritic; antidiabetic; antiallergic; antiinflammatory; anti-human immunodeficiency virus; virucide; antibacterial; cytostatic; neuroprotective; tuberculostatic; protozoacide.
MECHANISM OF ACTION - **Vaccine**. No supporting data is given.
USE - (I), (II) or (IV) is useful for immunization, by administering (I), (II) or (IV) to a subject, where the administration produces an immune response, such as humoral, cellular or protective immune response, preferably a Th type 2 T-helper (Th2) response that is specific for (D). The administration induces **antibodies** specific for (D) of a subtype corresponding to the Th2 subtype in the subject. The subject does not generate a Th2 subtype that is specific for pilus or pilin polypeptide or (D) (claimed). (I) or (II) is useful for the production of **vaccines** for **prevention** of infectious diseases such as human immunodeficiency virus, viral hepatitis, measles, chicken pox, pneumonia, tuberculosis, syphilis, malaria, and for **treating** allergy, cancer, and chronic diseases induced or accelerated by a Th1 type immune response, such as arthritis, colitis, diabetes and multiple sclerosis. (I) is useful to generate defined self-specific **antibodies** and specific immune responses of the Th2 type.
ADVANTAGE - (I) allows the creation of highly efficient **vaccines** against infectious diseases, and for **treating** allergy, cancer, and chronic diseases induced or accelerated by a Th1 type immune response.
Dwg.0/20

L36 ANSWER 8 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-159513 [16] WPIDS
DOC. NO. CPI: C2001-047434
TITLE: Novel polypeptide useful as **vaccines** for **prevention** of diseases e.g. **urinary tract infections**, caused by

Enterobacteriaceae, has specific domains derived from **pilus-protein** like **FimA** of Escherichia coli.

DERWENT CLASS: B04 D16
INVENTOR(S): HULTGREN, S J; LANGERMANN, S
PATENT ASSIGNEE(S): (MEDI-N) MED IMMUNE INC; (MEDI-N) MEDIMMUNE INC; (UNIW) UNIV WASHINGTON
COUNTRY COUNT: 89
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001005827	A1	20010125	(200116)*	EN	44
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2000061005	A	20010205	(200128)		
EP 1196437	A1	20020417	(200233)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003505044	W	20030212	(200321)		43

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001005827	A1	WO 2000-US19277	20000714
AU 2000061005	A	AU 2000-61005	20000714
EP 1196437	A1	EP 2000-947385	20000714
		WO 2000-US19277	20000714
JP 2003505044	W	WO 2000-US19277	20000714
		JP 2001-511484	20000714

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000061005	A	Based on	WO 2001005827
EP 1196437	A1	Based on	WO 2001005827
JP 2003505044	W	Based on	WO 2001005827

PRIORITY APPLN. INFO: US 1999-144013P 19990715
AN 2001-159513 [16] WPIDS
AB WO 200105827 A UPAB: 20010323
NOVELTY - An isolated polypeptide (I) comprising one or more portions of **FimA**, such as **FimA** domain loop (ADL)-1, ADL-2, ADL-3, ADL-4 and ADL-5, where the polypeptide is other than **FimA** or a polypeptide comprising **FimA**, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a nucleic acid encoding (I);
(2) a **vaccine** composition comprising (I);
(3) **antibodies** specific for (I);
(4) a vector comprising the nucleic acid of (1); and
(5) a cell comprising the vector of (4).

ACTIVITY - Antibacterial.
No supporting biological data is given.

MECHANISM OF ACTION - **Vaccine**.
USE - The **vaccine** is useful for **prevention** of diseases, such as **urinary tract infection** caused by a bacterium of the family Enterobacteriaceae, especially Escherichia coli in animals, in particular humans. The **antibodies** are used for **treating** the disease described above (claimed). Dwg.0/1

L36 ANSWER 9 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-138315 [14] WPIDS
DOC. NO. CPI: C2001-040807
TITLE: Immunogenic complexes and polypeptides for **vaccinating** against urinary tract disease, comprises a **pilus protein** component and a bacterial chaperone.
DERWENT CLASS: B04 D16
INVENTOR(S): BARNHART, M; HULTGREN, S J; KNIGHT, S; PINKNER, J S; SAUER, F; WAKSMAN, G
PATENT ASSIGNEE(S): (MEDI-N) MED IMMUNE INC; (MEDI-N) MEDIMMUNE INC
COUNTRY COUNT: 89
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001004148	A2	20010118	(200114)*	EN	60
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2000060940	A	20010130	(200127)		
EP 1194561	A2	20020410	(200232)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003504083	W	20030204	(200320)		98

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001004148	A2	WO 2000-US	
AU 2000060940	A	AU 2000-6(	
EP 1194561	A2	EP 2000-9(	
		WO 2000-U(	
JP 2003504083	W	WO 2000-U	
		JP 2001-5	

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000060940	A	Based on	WO 20010
EP 1194561	A2	Based on	WO 20010
JP 2003504083	W	Based on	WO 20010

PRIORITY APPLN. INFO: US 2000-184442P 20000223; US 1999-143582P 19990713; US 1999-144359P 19990716
AN 2001-138315 [14] WPIDS
AB WO 200104148 A UPAB: 20010312

NOVELTY - Immunogenic complexes (I) and polypeptides (II) comprising a **pilus protein** component and a donor complement portion as part of the same amino acid sequence, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a single polypeptide or polypeptide complex comprising (II) and an adhesin;

(2) a single polypeptide or polypeptide complex comprising (II) and a pilin;

(3) a polynucleotide (III) comprising a coding region for (II);

(4) an **antibody** (IVa) specific for an immunogenic complex selected from (I) and/or (II);

(5) an **antibody** (IVb) specific for (II);

(6) a genetically engineered cell expressing (IVa) and/or (IVb);

(7) a genetically engineered cell expressing (III);

(8) a vector comprising (III);

(9) a genetically engineered cell expressing (II);

(10) a composition comprising (IVa) or (IVb) suspended in a pharmacologically acceptable **carrier**, diluent or excipient;

(11) a **vaccine** composition (Va) comprising and immunogenically effective amount of (I), suspended in a pharmacologically acceptable **carrier**, diluent or excipient;

(12) a **vaccine** composition (Vb) comprising an immunogenically effective amount of (II), suspended in a pharmacologically acceptable **carrier**, diluent or excipient;

(13) a method (X) of **preventing** a disease in a mammal, comprising administering (Va) or (Vb); and

(14) a method of producing (II).

ACTIVITY - Antibacterial

MECHANISM OF ACTION - **Vaccine**.

Three dosages (15, 3 and 0.6 micro g) of donor strand complemented (dsc) immunogen (the **adhesin** molecule **FimH**) were evaluated . Complete Freund's adjuvant/incomplete Freund's adjuvant (CFA/IFA) were used as the adjuvant and 10, 6 and 1.2 micro g FimCH (a complex of the **FimH** and the chaperone FimC) was used for comparison. The NU 14 strain of Escherichia coli was administered the dosages intraurethrally, and the results indicate that dscFimH offered significant protection at the 3 micro g and 15 micro g doses compared with the control (CFA/IFA) and high dose FimCH.

USE - **Vaccine** compositions (Va and Vb) are useful for **preventing** urinary tract disease in a human caused by the bacterium family enterobacteriaceae specifically Escherichia coli and a composition comprising (IV) or (IVb) is useful for **treating** the disease (claimed).

ADVANTAGE - Pilus associated **adhesins**, such as **FimH** are relatively conserved proteins among different species and strains of bacteria, therefore **vaccines** incorporating the **FimH** antigen exhibit a broad spectrum of protection compared with current pilus-fiber based **vaccines**.

Dwg.0/12

L36 ANSWER 10 OF 67 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2001451349 MEDLINE
DOCUMENT NUMBER: 21388411 PubMed ID: 11497451
TITLE: Detection of shared magnetic **antigenic determinants** on whole Moraxella bovis pili by use of antisera to cyanogen bromide-cleaved M. bovis **pilus protein**.
AUTHOR: Greene W H; Grubbs S T; Potgieter L N
CORPORATE SOURCE: Department of Comparative Medicine, University of Tennessee

College of Veterinary Medicine, Knoxville 37901, USA.
SOURCE: AMERICAN JOURNAL OF VETERINARY RESEARCH, (2001 Aug) 62 (8) 1279-84.
Journal code: 0375011. ISSN: 0002-9645.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200201
ENTRY DATE: Entered STN: 20010813
Last Updated on STN: 20020125
Entered Medline: 20020122

AB OBJECTIVE: To determine the ability of antisera against cyanogen bromide-cleaved pili from 4 strains of Moraxella bovis to react with whole or nondenatured pili. SAMPLE POPULATION: Antisera to 4 strains of M. bovis produced by New Zealand White rabbits. **PROCEDURE**: Pili from 4 strains of M. bovis were collected and purified. **Pilus proteins** (pilin) were cleaved, using cyanogen bromide. Whole pilus and cyanogen bromide-cleaved pilin were injected into rabbits. Antisera were serially diluted, reacted with 4 strains of M. bovis, and examined by immunoelectron microscopy and indirect immunofluorescence. RESULTS: Antisera to whole pili aggregated and distorted pili from homologous strains, but pili from heterologous strains were unaffected. Antisera to cleaved pilin fragments resulted in partial aggregation and thickening of homologous and heterologous pili, suggestive of heterospecific **antibodies**. Attachment of **antibodies** to pili was detected by indirect immunofluorescence, indicating a strong reaction of antisera to whole pili with homologous pili. Weak cross-reactions were evident with certain heterologous strains. In contrast, antisera to cleaved pilin fragments reacted strongly with pili from homologous and heterologous strains. CONCLUSIONS AND CLINICAL RELEVANCE: We detected shared **antigenic determinants** on pili from various strains of M. bovis that were not immunogenic in intact pili. These sites were immunogenic after cleavage of **pilus protein** with cyanogen bromide, and antisera produced to protein fragments reacted with whole pili from heterologous strains of the organism. **Vaccines** produced from cyanogen bromide-**treated** pili may induce broader immunity against infectious bovine keratoconjuctivitis than that provided by currently available **vaccines**.

L36 ANSWER 11 OF 67 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2001423624 MEDLINE
DOCUMENT NUMBER: 21247219 PubMed ID: 11348773
TITLE: Immunoblot analysis of cyanogen bromide-cleaved Moraxella bovis pilin reveals presence of shared **antigenic determinants** on pili from heterologous strains.
AUTHOR: Greene W H; Grubbs S T; Potgieter L N
CORPORATE SOURCE: Department of Comparative Medicine, College of Veterinary Medicine, University of Tennessee, P.O. Box 850, Knoxville, TN 37901-1071, USA.
SOURCE: VETERINARY MICROBIOLOGY, (2001 Jun 22) 80 (4) 365-72.
Journal code: 7705469. ISSN: 0378-1135.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010730
Last Updated on STN: 20010730

Entered Medline: 20010726

AB Moraxella bovis **pilus proteins**, collected and purified from four strains of M. bovis, were cleaved with cyanogen bromide. Two major fragments were produced. Antisera were produced in rabbits to the pilin protein fragments and to whole uncleaved pili from these strains. Immunoblots of whole and cyanogen bromide-cleaved pilin were reacted with the homologous and heterologous antisera to whole pili and cleaved pilin. Antisera to whole pili reacted strongly with homologous pilin. Weaker and inconsistent reactions were detected with heterologous pilin. Antisera produced to cyanogen bromide-cleaved pilin proteins reacted strongly with homologous and heterologous pilin fragments and uncleaved pilin proteins. These findings demonstrate the presence of conserved **antigenic determinants** on pili from heterologous strains that are non-immunogenic in the intact pilus but are immunogenic after **treatment** with cyanogen bromide. Cyanogen bromide-**treated** pilus preparation might have potential as a **vaccine** because **antibodies** are induced against heterologous strains of M. bovis, whether these cross-reactive **antibodies** are protective remains to be determined.

L36 ANSWER 12 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2000-136677 [12] WPIDS
CROSS REFERENCE: 1999-008707 [01]
DOC. NO. CPI: C2000-041834
TITLE: Genetically engineered immunogenic composition containing a hydrolytically active enzyme and an immunologically active gene product useful as a **vaccine**.
DERWENT CLASS: B04 C06 D16
INVENTOR(S): BEJ, A K; EBERL, L; GIVSKOV, M; KRISTENSEN, C S; MOLIN, S
PATENT ASSIGNEE(S): (GXBI-N) GX BIOSYSTEMS AS
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 6017730	A	20000125	(200012)*		82

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
US 6017730	A	Cont of	US 1992-863261	19920406
		CIP of	US 1993-133665	19931013
		Cont of	US 1995-544822	19951018
			US 1998-70964	19980504

FILING DETAILS:

PATENT NO	KIND		PATENT NO
US 6017730	A	Cont of	US 5834233

PRIORITY APPLN. INFO: US 1995-544822 19951018; US 1992-863261 19920406; US 1993-133665 19931013; US 1998-70964 19980504
AN 2000-136677 [12] WPIDS
CR 1999-008707 [01]
AB US 6017730 A UPAB: 20000308
NOVELTY - An immunogenic composition containing a gene coding a hydrolytically active enzyme which limits the function of the cells in the

composition and an immunologically active gene product, is new.

DETAILED DESCRIPTION - An immunogenic composition (I) comprises live nonpathogenic or attenuated pathogenic cells containing a gene whose expression results in the formation of an enzyme which is present and hydrolytically active in the cytoplasm of the cells. The cells also contain a regulatory nucleotide sequence which regulates expression of the gene so that formation of the enzyme in the cells is at a rate which results in the hydrolysis of hydrolyzable cytoplasmic substances necessary for non-limited function of the cells to an extent where the function of the cells is being limited. The cells contain a further DNA not naturally related to the gene coding for the hydrolytically active enzyme or to the regulatory nucleotide sequence, this sequence codes for an immunogenic gene product which comprises at least one foreign pathogen-associated epitope. The cells are function-limited to an extent which, when the composition is administered to a human or to a nonhuman animal, allows the cells to express the immunogenic gene product for a period of time and in an amount sufficient to obtain an immune response in the human or non human animal but which does not allow the cells to persist in the human or non human animal.

ACTIVITY - No specific activity given.

MECHANISM OF ACTION - **Vaccine.**

USE - (I) is used to immunize a human or nonhuman animal subject against a pathogen (claimed). When the composition is administered to a subject the cells express the immunologically active gene product for a regulated period of time and at an amount which allows an effective immune response but does not allow the cells to persist in the human or animal.

ADVANTAGE - The immunogenic composition contains genetically modified microorganisms which are biologically contained so there is a limit to their survival. This reduces the risks of undesirable and/or uncontrollable ecological consequences which may result from the use of genetically modified microorganisms

Dwg.0/43

L36 ANSWER 13 OF 67 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER:	2000422628 MEDLINE
DOCUMENT NUMBER:	20381367 PubMed ID: 10908657
TITLE:	Snapshots of usher-mediated protein secretion and ordered pilus assembly.
AUTHOR:	Saulino E T; Bullitt E; Hultgren S J
CORPORATE SOURCE:	Department of Molecular Microbiology and Microbial Pathogenesis, Washington University School of Medicine, St. Louis, MO 63110-1010, USA.
SOURCE:	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (2000 Aug 1) 97 (16) 9240-5. Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY:	United States
DOCUMENT TYPE:	Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:	English
FILE SEGMENT:	Priority Journals
ENTRY MONTH:	200009
ENTRY DATE:	Entered STN: 20000915 Last Updated on STN: 20000915 Entered Medline: 20000905

AB Type 1 pilus biogenesis was used as a paradigm to investigate ordered macromolecular assembly at the outer cell membrane. The ability of Gram-negative bacteria to secrete proteins across their outer membrane and to assemble adhesive macromolecular structures on their surface is a defining event in pathogenesis. We elucidated genetic, biochemical, and biophysical requirements for assembly of functional type 1 pili. We discovered that the minor **pilus protein FimG**

plays a critical role in nucleating the formation of the adhesive tip fibrillum. Genetic methods were used to trap pilus subunits during their translocation through the outer membrane usher protein, providing data on the structural interactions that occur between subunit components during type 1 pilus formation. Electron microscopic and biochemical analyses of these stepwise assembly intermediates demonstrated that translocation of pilus subunits occurs linearly through the usher's central channel, with formation of the pilus helix occurring extracellularly. Specialized pilin subunits play unique roles both in this multimerization and in the final ultrastructure of the adhesive pilus.

L36 ANSWER 14 OF 67 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 1998109417 MEDLINE
DOCUMENT NUMBER: 98109417 PubMed ID: 9449363
TITLE: Bacterial adhesion pili are heterologous assemblies of similar subunits.
AUTHOR: Bullitt E; Makowski L
CORPORATE SOURCE: Department of Biophysics, Boston University School of Medicine, Massachusetts 02118-2526, USA.. bullitt@bu.edu
SOURCE: BIOPHYSICAL JOURNAL, (1998 Jan) 74 (1) 623-32.
Journal code: 0370626. ISSN: 0006-3495.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199804
ENTRY DATE: Entered STN: 19980410
Last Updated on STN: 19980410
Entered Medline: 19980402

AB P-pili on uropathogenic bacteria are 68-A-diameter rods typically 1 microm in length. These structures project from the outer membrane of Escherichia coli, and contain on their distal tip a thin fibrillum, 25 A in diameter and 150 A long, displaying an adhesin protein responsible for the binding of the bacterium to the surface of epithelial cells lining the urinary tract. Operationally, it is possible to identify three morphologically distinct states of the 68-A-diameter P-pili rods, based on the degree of curvature each can adopt. These states are designated "straight," "curved," and "highly curved." The rods can also be unwound to form thin "threads" that are very similar to the tip fibrillae. Electron microscope data are used to distinguish among these four morphological states and to define limits on the shapes of the **pilus proteins**. The mechanical properties of the **PapA** polymers are assessed, and implications of rod polymorphism for pilus function are discussed. A wide variety of data are considered in light of the possibility that all pilins are similar in molecular architecture, with specific differences designed to optimize their specialized functions in the pilus assembly.

L36 ANSWER 15 OF 67 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 1998339965 MEDLINE
DOCUMENT NUMBER: 98339965 PubMed ID: 9675365
TITLE: Synthesis of some amino and carboxy analogs of galabiose; evaluation as inhibitors of the **pilus protein** PapGJ96 from Escherichia coli.
AUTHOR: Hansen H C; Magnusson G
CORPORATE SOURCE: Center for Chemistry and Chemical Engineering, Lund University, Sweden.
SOURCE: CARBOHYDRATE RESEARCH, (1998 Feb) 307 (3-4) 233-42.
Journal code: 0043535. ISSN: 0008-6215.
PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199808
ENTRY DATE: Entered STN: 19980817
Last Updated on STN: 19980817
Entered Medline: 19980806

AB The 2'-amino-2'-deoxy, 6-amino-6-deoxy, and 6-carboxy analogs of the reference inhibitors 2-(trimethylsilyl)ethyl (alpha-D-galactopyranosyl)-(1->4)-ss-D-galactopyranoside were synthesized and evaluated as inhibitors of the binding of the Escherichia coli-derived **pilus protein** PapGj96, using an ELISA assay. The inhibitory efficiencies (Krel; relative to the reference inhibitor) were: 157,13, and < 8, respectively. The results support the previously proposed combining site model, where the protein carries a negatively charged amino acid residue near HO-2' and HO-6 of the galabio-side.

L36 ANSWER 16 OF 67 MEDLINE on STN
ACCESSION NUMBER: 1998193928 MEDLINE
DOCUMENT NUMBER: 98193928 PubMed ID: 9532736
TITLE: Characterization of a 20-kDa **pilus protein** expressed by a diarrheogenic strain of non-O1/non-O139 Vibrio cholerae.
AUTHOR: Sengupta T K; Nandy R K; Mukhopadhyay S; Hall R H; Sathyamoorthy V; Ghose A C
CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
SOURCE: FEMS MICROBIOLOGY LETTERS, (1998 Mar 15) 160 (2) 183-9. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 19980514
Last Updated on STN: 19980514
Entered Medline: 19980501

AB A diarrheogenic strain of non-O1/non-O139 Vibrio cholerae (10,325) belonging to serogroup O34 was earlier shown to express a new type of pilus composed of a 20-kDa subunit protein. Amino-terminal sequence data (determined up to 20 amino acid residues) of this protein showed it to be different from the subunit proteins of other known types of pili of V. cholerae. On the other hand, it showed complete homology with the corresponding sequence of a 22-kDa outer membrane protein (OmpW) of V. cholerae. Expression of 10,325 pili was favored in AKI rather than in NB medium and at 30 degrees C rather than at 37 degrees C. Further, cultural conditions favoring pilus expression also enhanced autoagglutination and adherence properties of strain 10,325. An antiserum to the 20-kDa protein induced passive protection against challenge with the parent organism 10,325, but not against V. cholerae O1 strains. Such protection was shown to be mediated by inhibition of intestinal colonization in vivo.

L36 ANSWER 17 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1997-197198 [18] WPIDS
DOC. NO. CPI: C1997-063217
TITLE: Oral composition containing **antibodies** - to Actinobacillus actinomycetemcomitans **pilus protein**, useful for **preventing** or **treating** periodontal disease.
DERWENT CLASS: B04 D13 D16 D21

PATENT ASSIGNEE(S): (LIOY) LION CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 09052822	A	19970225	(199718)*		9

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 09052822	A	JP 1995-225685	19950810

PRIORITY APPLN. INFO: JP 1995-225685 19950810
AN 1997-197198 [18] WPIDS
AB JP 09052822 A UPAB: 19970502
Oral composition contg. an **antibody** which is prepd. by immunising an animal with a synthetic peptide corresponding to a fragment derived from the pilus of Actinobacillus actinomycetemcomitans as antigen, is new.

USE - The oral compositions are used in **prevention** or **treatment** of periodontal diseases caused by Actinobacillus actinomycetemcomitans. The **antibody** (as antiserum, milk, egg or as **antibody** purified therefrom) may be formulated into oral compsns. e.g. toothpaste or powder or liq. prepns., mouthwash, mouth tonic, troches, pastes, cream, chewing gum, candy, milk prods. and applied at a dose of 0.0001-50 g/kg/day. The content of the **antibody** in the compsns. may be 0.0002-10 wt.% pref. 0.002-5%.

ADVANTAGE - In a test with a rabbit's antiserum prepd. as above, adhesion of Actinobacillus actinomycetemcomitans to the human cheek epithelium was inhibited about 85% at 100-fold dilution.
Dwg.0/2

L36 ANSWER 18 OF 67 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 97352697 MEDLINE
DOCUMENT NUMBER: 97352697 PubMed ID: 9209056
TITLE: Identification and localization of the Tgl protein, which is required for Myxococcus xanthus social motility.
AUTHOR: Rodriguez-Soto J P; Kaiser D
CORPORATE SOURCE: Department of Biochemistry, Stanford University School of Medicine, California 94305-5427, USA.
SOURCE: JOURNAL OF BACTERIOLOGY, (1997 Jul) 179 (13) 4372-81.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 19970902
Last Updated on STN: 19970902
Entered Medline: 19970819
AB Tgl protein is required for the production of the type IV pili found at a pole of the Myxococcus xanthus cell. These pili are essential for social motility. Evidence is presented that Tgl is a membrane protein, based on experiments with polyclonal **antibody** specific for Tgl that was raised against the fusion proteins beta-galactosidase-Tgl and TrpE-Tgl. Immunoaffiity-purified **antibody** reacted with a protein in M. xanthus having an apparent molecular mass of 27.5 kDa as measured by

sodium dodecyl sulfate-polyacrylamide gel electrophoresis, while the sequence of the tgl gene translates into a polypeptide of 27 kDa. Although these numbers are close, it is likely that the primary tgl translation product is **processed** and modified in M. xanthus. The N terminus has a signal peptidase II recognition sequence, cleavage of which is expected to remove 19 amino acid residues. When the tgl gene is expressed in Escherichia coli, the protein product consistently migrates faster in the gel than mature Tgl expressed in M. xanthus, suggesting a second modification by addition which slows migration of the protein from M. xanthus. Tgl, as detected by its specific **antibody**, sediments with the membrane fraction of cells. It can be extracted with detergents but not with salt or by the addition of chelators for divalent cations. In an equilibrium gradient, Tgl bands at the buoyant density of membranes and with the NADH-oxidase activity. Intact cells failed to bind anti-Tgl **antibody**, and less than 2% of the total Tgl is released in soluble form from the periplasm. Yet, cells that had been osmotically shocked and **treated** with paraformaldehyde were able to react with the specific **antibody**--a reaction absent from cells with a deletion of the tgl transcription unit. Assuming that osmotic shock disrupts the outer membrane, the fractionation and localization data imply that Tgl is attached to the inner or outer membranes, from which it is exposed to the intermembranous space. Tgl is necessary for synthesis of pili in M. xanthus and is the only **pilus protein** that can be donated by other cells (stimulation). Tgl contains six tandem copies of the tetratrico peptide repeat structural motif. Its membrane localization, capacity for stimulation, and content of tetratrico structural repeats together suggest that Tgl may be necessary for the assembly of pilin subunits into filaments.

L36 ANSWER 19 OF 67 JAPIO (C) 2003 JPO on STN
ACCESSION NUMBER: 1996-116978 JAPIO
TITLE: PREPARATION OF **ANTIBODY** FAB LIBRARY
INVENTOR: IHARA SEIJI; TAKEKOSHI MASATAKA; TANAKA HIDEYUKI
PATENT ASSIGNEE(S): NISSHINBO IND INC
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 08116978	A	19960514	Heisei	C12N015-09

APPLICATION INFORMATION
STN FORMAT: JP 1994-252457 19941018
ORIGINAL: JP06252457 Heisei
PRIORITY APPLN. INFO.: JP 1994-252457 19941018
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996

AN 1996-116978 JAPIO
AB PURPOSE: To obtain the subject vector containing a cistron having a linker containing a site for accepting the gene of H-chain Fd constituting Fab and a cistron having a site for accepting an L-chain gene and useful for the preparation of a library for producing Fab fragment.
CONSTITUTION: This phagimide vector to give an expression library of an **antibody** Fab fragment by transforming E.coli is produced by forming the 1st cistron containing a tac-SD promoter, a pectate-dissolving leader sequence, a linker part having a site for accepting a gene selected from a gene coding an H-chain Fd and a gene coding an L-chain constituting an **antibody** Fab fragment and a termination site from the 5'-site in the order and the 2nd cistron containing a tac-SD promoter, a pectate-dissolving leader sequence, a linker site having a site for accepting the other gene selected from a gene coding an H-chain Fd and a

gene coding an L-chain, a GeneIII gene coding a **pilus protein** and a termination site from the 5'-site in the order.
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L36 ANSWER 20 OF 67 JAPIO (C) 2003 JPO on STN
ACCESSION NUMBER: 1996-048695 JAPIO
TITLE: PEPTIDES CONTAINING SEQUENCE OF PORPHYROMONAS GINGIVALIS TYPE II **PILUS PROTEIN** AND THEIR USES
INVENTOR: YASUDA KENJI; OGAWA TOMOHIKO; YAMADA KEIKO; KITAGUNI HIDESABURO; HASEGAWA MAMORU; FUKUI MASANORI; MORI HIDEJI
PATENT ASSIGNEE(S): MEITO SANGYO KK
KYOWA MEDEX CO LTD
KYOWA HAKKO KOGYO CO LTD
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 08048695	A	19960220	Heisei	C07K007-06

APPLICATION INFORMATION
STN FORMAT: JP 1994-204422 19940805
ORIGINAL: JP06204422 Heisei
PRIORITY APPLN. INFO.: JP 1994-204422 19940805
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1996
AN 1996-048695 JAPIO
AB PURPOSE: To obtain the subject new peptides for producing a composition for diagnosis of periodontal diseases, **preventive vaccine** and an **antibody** for **preventing** and **treating** periodontal disease and being a subunit protein fragment constituting type II pilus of Porphyromonas gingivalis.
CONSTITUTION: These new peptides are peptides corresponding to a fragment derived from an amino acid sequence of 72KDa subunit protein constituting type II pilus of Porphyromonas gingivalis and comprising a fragment containing continuing 5-10C amino acid residues expressed by formulas I to III, etc., and are useful for producing a composition for diagnosis of periodontal disease, **vaccine** for **preventing** periodontal disease and an **antibody** for **preventing** and **treating** periodontal disease. These peptides are obtained by synthesizing by a liquid phase or solid phase synthetic method of peptides from the amino sequence of 72KDa subunit protein fragment derived from Porphyromonas gingivalis 0MZ409 strain.
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L36 ANSWER 21 OF 67 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 97020023 MEDLINE
DOCUMENT NUMBER: 97020023 PubMed ID: 8866477
TITLE: Assembly proteins of CS1 pili of enterotoxigenic Escherichia coli.
AUTHOR: Sakellaris H; Balding D P; Scott J R
CORPORATE SOURCE: Department of Microbiology and Immunology, Emory University School of Medicine, Atlanta, Georgia 30322, USA.
CONTRACT NUMBER: AI24870 (NIAID)
SOURCE: MOLECULAR MICROBIOLOGY, (1996 Aug) 21 (3) 529-41.
Journal code: 8712028. ISSN: 0950-382X.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 199703
ENTRY DATE: Entered STN: 19970414
Last Updated on STN: 19990129
Entered Medline: 19970328

AB Some strains of enterotoxigenic Escherichia coli associated with human diarrhoeal disease produce a class of pili represented by those called CS1. For the assembly of the major-pilin subunit, CooA, into pili, each of four linked genes, cooB, A, C, and D, is required. In this study, we have determined the subcellular localization of CooB, C and D, and investigated the molecular interactions of these proteins using specific antisera. CooD appears to be an integral **pilus protein** because it co-purifies with, and is strongly associated with, CS1 pili. In keeping with its role as an assembly protein, the CooD minor pilin (when overexpressed in CS1-piliated strains) was detected in periplasmic intermolecular complexes with the major-pilin subunit CooA. CooB is an assembly protein found exclusively in the periplasm of CS1-piliated strains. CooB also forms periplasmic intermolecular complexes with CooA, but does not constitute part of the final pilus structure. Immunoblot analysis of cell fractions showed that CooC is an outer membrane protein of CS1-piliated E. coli. Based on this information, we have proposed a model for CS1-pilus assembly which is very similar to the model for polymerization of the **PapA** pilin of uropathogenic E. coli. As the assembly proteins of Pap and CS1 pili are structurally unrelated, this may represent a case of convergent evolution.

L36 ANSWER 22 OF 67 MEDLINE on STN DUPLICATE 10
ACCESSION NUMBER: 95291261 MEDLINE
DOCUMENT NUMBER: 95291261 PubMed ID: 7773237
TITLE: Detection of attachment of enterotoxigenic Escherichia coli (ETEC) to human small intestinal cells by enzyme immunoassay.
AUTHOR: Mynott T L; Luke R K; Chandler D S
CORPORATE SOURCE: School of Agriculture, La Trobe University, Bundoora, Victoria, Australia.
SOURCE: FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1995 Feb) 10 (3-4) 207-18.
Journal code: 9315554. ISSN: 0928-8244.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199507
ENTRY DATE: Entered STN: 19950720
Last Updated on STN: 19950720
Entered Medline: 19950713

AB Simple immunoassays were developed to study the binding between enterocytes of the small intestine and other cell types, and enterotoxigenic Escherichia coli (ETEC). CFA/I or CFA/II **pilus protein** or CFA-positive E. coli bacteria were immobilised in wells of microtitre plates and incubated with vesicles or crude mucus prepared from human brush border enterocytes. Binding of the cell preparations was detected by adding specific rabbit anti-brush border IgG followed by urease-labelled goat anti-rabbit IgG and urea substrate. The binding of purified CFA/I to human or rabbit small intestine, human oral epithelial cells or Caco-2 cells was detected with specific anti-CFA/I IgG. Both human brush border and mucus-derived preparations were able to attach to ETEC. The binding was CFA-specific and strong enough to withstand several washings. In contrast, CFA/I did not bind to small intestinal cells of non-human small intestinal origin, indicating that there may be important

differences in affinity between receptors present on human small intestinal cells and cells of non-human small intestinal origin. **Antibodies** directed against human small intestinal and non-small intestinal cells did not cross-react with either preparation, indicating that receptors between these different cell sources are different. The EIA proved useful during the identification of a newly-recognised 15 kDa bacterial surface component of ETEC strain H10407P, which may function as a putative attachment factor. The EIAs developed in this study were easy to perform and multiple tests could be performed on small samples, including biopsy samples obtained during endoscopy.

L36 ANSWER 23 OF 67 MEDLINE on STN
ACCESSION NUMBER: 94291946 MEDLINE
DOCUMENT NUMBER: 94291946 PubMed ID: 7912681
TITLE: Epidemic isolates of Vibrio cholerae 0139 express antigenically distinct types of colonization pili.
AUTHOR: Sengupta T K; Sengupta D K; Nair G B; Ghose A C
CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
SOURCE: FEMS MICROBIOLOGY LETTERS, (1994 May 15) 118 (3) 265-71. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199408
ENTRY DATE: Entered STN: 19940815
Last Updated on STN: 19950206
Entered Medline: 19940803

AB Vibrio cholerae belonging to the recently described serogroup 0139, which are responsible for the current cholera epidemics in India and Bangladesh, were shown to express pilus-like structures partially cross-reacting with the toxin-coregulated pilus of V. cholerae strain (0395) belonging to the 01 serogroup and classical biotype. The 0139 pili were composed of 20 kDa subunit proteins which were antigenically related to the 20 kDa **pilus protein** of another diarrhoeagenic non-01 V. cholerae strain (serogroup 034) isolated earlier. The pili described in this study were found to be involved in the intestinal colonization process and, therefore, may contribute towards the virulence of the 0139 epidemic isolates.

L36 ANSWER 24 OF 67 MEDLINE on STN DUPLICATE 11
ACCESSION NUMBER: 93163271 MEDLINE
DOCUMENT NUMBER: 93163271 PubMed ID: 8094396
TITLE: Use of monoclonal **antibodies** specific for the a determinant of K88 pili for detection of enterotoxigenic Escherichia coli in pigs.
AUTHOR: Westerman R B; Fortner G W; Mills K W; Phillips R M; Greenwood J M
CORPORATE SOURCE: Department of Veterinary Diagnostic Investigation, College of Veterinary Medicine, Kansas State University, Manhattan 66506.
SOURCE: JOURNAL OF CLINICAL MICROBIOLOGY, (1993 Feb) 31 (2) 311-4. Journal code: 7505564. ISSN: 0095-1137.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199303
ENTRY DATE: Entered STN: 19930402

Last Updated on STN: 19950206
Entered Medline: 19930316

AB Monoclonal **antibodies** directed against the a determinant of K88 pili from porcine enterotoxigenic Escherichia coli which react with all three K88 variants have been produced. These **antibodies** have been used for diagnosis of porcine enterotoxigenic E. coli in a direct enzyme-linked immunosorbent assay with sensitivity to 50 ng of **pilus protein** per ml.

L36 ANSWER 25 OF 67 MEDLINE on STN
ACCESSION NUMBER: 94010252 MEDLINE
DOCUMENT NUMBER: 94010252 PubMed ID: 8104843
TITLE: A 20-kDa **pilus protein** with haemagglutination and intestinal adherence properties expressed by a clinical isolate of non-01 Vibrio cholerae.
AUTHOR: Sengupta T K; Sengupta D K; Ghose A C
CORPORATE SOURCE: Department of Microbiology, Bose Institute, Calcutta, India.
SOURCE: FEMS MICROBIOLOGY LETTERS, (1993 Sep 1) 112 (2) 237-42.
Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199311
ENTRY DATE: Entered STN: 19940117
Last Updated on STN: 19950206
Entered Medline: 19931122

AB A clinical isolate of non-01 V. cholerae (10325) was shown to exhibit higher haemagglutination and intestinal adherence activities in vitro when grown in enriched media, such as trypticase soy broth (TSB) as compared to those of cells grown in a synthetic Tris-buffered or 'T'-medium. A comparison of their cell-surface protein and lipopolysaccharide profiles suggested the involvement of a 20-kDa protein in the cellular adherence process. An antiserum, raised specifically against the 20-kDa protein, recognised pilus structures on the surface of TSB grown cells. Further studies showed that the pilus was morphologically as well as antigenically distinct from toxin coregulated pilus (TCP) or other types of pili expressed by both 01 and non-01 organisms. Inhibition data established the involvement of the 20-kDa protein in haemagglutination as well as intestinal tissue adherence activities of the parent organism.

L36 ANSWER 26 OF 67 MEDLINE on STN DUPLICATE 12
ACCESSION NUMBER: 93175121 MEDLINE
DOCUMENT NUMBER: 93175121 PubMed ID: 8094930
TITLE: Pili in microspheres protect rabbits from diarrhoea induced by E. coli strain RDEC-1.
AUTHOR: McQueen C E; Boedeker E C; Reid R; Jarboe D; Wolf M; Le M; Brown W R
CORPORATE SOURCE: Department of Gastroenterology, Walter Reed Army Institute of Research, Washington, DC 20307.
SOURCE: VACCINE, (1993) 11 (2) 201-6.
Journal code: 8406899. ISSN: 0264-410X.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199303
ENTRY DATE: Entered STN: 19930402
Last Updated on STN: 19970203

Entered Medline: 19930323

AB We tested whether **pilus proteins** of rabbit diarrhoeagenic Escherichia coli (RDEC-1), incorporated into biodegradable microspheres, could function as safe and effective oral immunogens in the rabbit diarrhoea model. The RDEC-1 adhesin, AF/R1, incorporated into poly(D,L-lactide-co-glycolide) microspheres, was administered intraduodenally. **Vaccinated** and **unvaccinated** rabbits were challenged with RDEC-1 and killed 1 week later. **Vaccination** with AF/R1 in microspheres did not cause diarrhoea or weight loss. After challenge, rabbits given AF/R1 in microspheres, in contrast to **unvaccinated** animals, remained in good health. RDEC-1 attachment to caecal epithelium of **vaccinated** rabbits was reduced ($p = 0.02$), whereas numbers of RDEC-1 in intestinal fluids were little affected. Also, in **vaccinated** animals, biliary anti-AF/R1 IgA levels were increased, and AF/R1-induced blast-cell transformation was vigorous in spleen cell cultures. We conclude that **vaccination** with AF/R1 in microspheres was safe and protected rabbits against RDEC-1 disease, probably by interfering with adherence of the bacteria to the intestinal mucosa. The interference might have been due to the presence of specific **antibodies** secreted in bile.

L36 ANSWER 27 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1993:313017 BIOSIS
DOCUMENT NUMBER: PREV199345019542
TITLE: Intraduodenal immunization with microencapsulated CFA/II induces a delayed, anti-CFA/II, IgG **antibody** -secreting spleen cell response.
AUTHOR(S): Borowski, R. (1); Sau, K.; Reid, R. H.; McQueen, C. E.; Boedeker, E. C.; Nellore, R.; Dalal, P.; Bhagat, H. R.
CORPORATE SOURCE: (1) Walter Reed Army Inst. Res., Washington, DC 20307 USA
SOURCE: Journal of Immunology, (1993) Vol. 150, No. 8 PART 2, pp. 36A.
Meeting Info.: Joint Meeting of the American Association of Immunologists and the Clinical Immunology Society Denver, Colorado, USA May 21-25, 1993
ISSN: 0022-1767.
DOCUMENT TYPE: Conference
LANGUAGE: English

L36 ANSWER 28 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1992-398530 [48] WPIDS
CROSS REFERENCE: 1991-295351 [40]; 1995-199683 [26]; 1996-019737 [02]; 1998-031704 [03]; 1998-129287 [12]; 1998-347245 [30]
DOC. NO. CPI: C1992-176755
TITLE: Protection against entero-pathogenic organisms - comprises oral admin. of compsn. consisting of synthetic peptide contg. CFA-I **pilus protein** T-cell epitope(s) and/or B-cell epitope(s) encapsulated in biodegradable polymeric matrix.
DERWENT CLASS: B04 C06 D16
INVENTOR(S): BOEDEKER, E C; CASSELS, F J; JARBOE, D; REID, R H; SETTERSTROM, J A
PATENT ASSIGNEE(S): (USSA) US SEC OF ARMY
COUNTRY COUNT: 18
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9219263	A1	19921112	(199248)*	EN	121
RW: AT BE CH DE DK ES FR GB GR IT LU NL SE					

W: AU CA FI JP NL NO
AU 9183036 A 19921221 (199311)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9219263	A1	WO 1991-US3328	19910513
AU 9183036	A	AU 1991-83036	19910513
		WO 1991-US3328	19910513

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9183036	A	Based on	WO 9219263

PRIORITY APPLN. INFO: US 1991-690485 19910424
AN 1992-398530 [48] WPIDS
CR 1991-295351 [40]; 1995-199683 [26]; 1996-019737 [02]; 1998-031704 [03]; 1998-129287 [12]; 1998-347245 [30]
AB WO 9219263 A UPAB: 19980730
A novel method for the protection against infection of a human or non-human mammal by enteropathogenic organisms comprises administering orally to the mammal an immunogenic amt. of a pharmaceutical compsn. consisting essentially of an antigenic synthetic peptide contg. CFA/I **pilus protein** T-cell epitopes; B-cell epitopes or mixts. of the two, encapsulated within a biodegradable polymeric matrix consisting of poly(DL-lactide-co- glycolide) having a relative ratio betweeen the amt. of lactide and glycolide components within the range of 48:52 to 58:42.

Also claimed is a **vaccine** for the immunisation of a human or non-human mammal against infection by enteropathogenic organisms consisting essentially of an antigenic synthetic peptide in the amt. of 0.1 to 1% encapsulated within a biodegradable-biocompatible polymeric matrix. More specifically the antigenic synthetic peptide is selected from those given in the specification.

USE/ADVANTAGE - The method provides extremely effective protection against bacterial or viral infections in the tissue of a mammal. The method protects against bacteria including Salmonella typhi, Shigella sonnei, S. flexnen, S. dysenteriae, S. boydii, E. coli, Vibrio cholera, yersinia, staphylococcus, clostridium and campylobacter. Viruses protected against include hepatitis A, rotaviruses, polio virus, HIV, Herpes, Simplex virus types 1 and 2, Varicella-zoster virus, Epstein-Barr virus and cytomegalo viruses. The microspheres do not have to be made up just prior to use as liposomes do and only a small amt. of antigen is required when dispersed within microspheres compared to larger amts. when antigen is used alone for intestinal immunisation. The antigen may be used orally whilst alone it may not be effective, even in large amts.. Free peptides may be used which alone are ineffective for intestinal infection. Intestinal T-cell responses to the antigens dispersed within microspheres indicate that long-lived intestinal immunity will be established
Dwg.0/78

L36 ANSWER 29 OF 67 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 93099848 MEDLINE
DOCUMENT NUMBER: 93099848 PubMed ID: 1361168
TITLE: Interactive surface in the PapD chaperone cleft is conserved in pilus chaperone superfamily and essential in subunit recognition and assembly.

AUTHOR: Slonim L N; Pinkner J S; Branden C I; Hultgren S J
CORPORATE SOURCE: Department of Molecular Microbiology, Washington University School of Medicine, St Louis, MO 63110.
CONTRACT NUMBER: 1R01AI29549 (NIAID)
2-S07-RR05389 (NCRR)
SOURCE: EMBO JOURNAL, (1992 Dec) 11 (13) 4747-56.
Journal code: 8208664. ISSN: 0261-4189.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199301
ENTRY DATE: Entered STN: 19930205
Last Updated on STN: 19950206
Entered Medline: 19930121

AB The assembly of adhesive pili in Gram-negative bacteria is modulated by specialized periplasmic chaperone systems. PapD is the prototype member of the superfamily of periplasmic pilus chaperones. Previously, the alignment of chaperone sequences superimposed on the three dimensional structure of PapD revealed the presence of invariant, conserved and variable amino acids. Representative residues that protruded into the PapD cleft were targeted for site directed mutagenesis to investigate the **pilus protein** binding site of the chaperone. The ability of PapD to bind to fiber-forming pilus subunit proteins to **prevent** their participation in misassembly interactions depended on the invariant, solvent-exposed arginine-8 (R8) cleft residue. This residue was also essential for the interaction between PapD and a minor pilus adaptor protein. A mutation in the conserved methionine-172 (M172) cleft residue abolished PapD function when this mutant protein was expressed below a critical threshold level. In contrast, radical changes in the variable residue glutamic acid-167 (E167) had little or no effect on PapD function. These studies provide the first molecular details of how a periplasmic pilus chaperone binds to nascently translocated pilus subunits to guide their assembly into adhesive pili.

L36 ANSWER 30 OF 67 MEDLINE on STN DUPLICATE 14
ACCESSION NUMBER: 92210497 MEDLINE
DOCUMENT NUMBER: 92210497 PubMed ID: 1556073
TITLE: Production of a conserved adhesin by the human gastroduodenal pathogen Helicobacter pylori.
AUTHOR: Doig P; Austin J W; Kostrzynska M; Trust T J
CORPORATE SOURCE: Department of Biochemistry and Microbiology, University of Victoria, British Columbia, Canada.
SOURCE: JOURNAL OF BACTERIOLOGY, (1992 Apr) 174 (8) 2539-47.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199205
ENTRY DATE: Entered STN: 19920515
Last Updated on STN: 19920515
Entered Medline: 19920506

AB An adhesin protein with an approximate subunit molecular weight of 19,600 has been purified from the gastric pathogen Helicobacter pylori. The protein was loosely associated with the cell surface and was removed by gentle stirring or shearing. Released aggregates of the 19.6-kDa protein were removed from suspension by ultracentrifugation and separated from contaminating membranes by washing in 1.0% sodium dodecyl sulfate (SDS). The SDS-insoluble protein was purified further by Mono Q anion-exchange

column chromatography. Electron microscopy of the purified adhesin demonstrated that it formed amorphous aggregates similar to the material attached to the bacterial cells and that the aggregates were morphologically distinct from typical fimbriae. Western blot (immunoblot) analysis with antiserum raised against the purified protein from one strain reacted with a protein with a similar subunit molecular weight present in all nine strains of H. pylori examined, but the protein was not present in other Helicobacter species examined. The N-terminal sequences of the 19.6-kDa protein purified from three different strains of H. pylori were identical for the first 28 amino acids, with the 10 amino-terminal residues showing limited sequence homology with the TcpA **pilus protein** of Vibrio cholerae. The H. pylori 19.6-kDa protein associated both with human and rabbit erythrocytes and with human buccal epithelial cells. Polystyrene microspheres coated with the protein agglutinated human, horse, and rabbit erythrocytes, suggesting that this protein species could mediate adhesion between H. pylori and eucaryotic cells. This ability to act as an adhesin may make this protein an important virulence factor for H. pylori and hence a potential target for a **vaccine** and therapy.

L36 ANSWER 31 OF 67 MEDLINE on STN DUPLICATE 15
ACCESSION NUMBER: 92192827 MEDLINE
DOCUMENT NUMBER: 92192827 PubMed ID: 1548076
TITLE: Human tracheobronchial mucin: purification and binding to Pseudomonas aeruginosa.
AUTHOR: Reddy M S
CORPORATE SOURCE: Department of Oral Biology, School of Dental Medicine, State University of New York, Buffalo 14214.
CONTRACT NUMBER: AI27401 (NIAID)
SOURCE: INFECTION AND IMMUNITY, (1992 Apr) 60 (4) 1530-5. Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199204
ENTRY DATE: Entered STN: 19920509
Last Updated on STN: 19920509
Entered Medline: 19920423

AB Colonization of the respiratory tract with Pseudomonas aeruginosa is a serious problem in cystic fibrosis and seriously ill hospitalized **patients**. Human tracheobronchial mucin (HTBM), the major glycoprotein of human tracheobronchial secretions, is known to interact with this pathogen, which may then be cleared by mucociliary action. However, the mechanism of interaction is not known. To understand this process, pure HTBM was isolated from tracheobronchial secretions of a laryngectomee. Following initial fractionation on Sepharose CL-2B, the HTBM-containing fraction was subjected to reductive methylation and then gel filtration. Pure HTBM was employed in an overlay binding assay to identify the bacterial adhesin(s) and mucin receptors that participate in mucin-P. aeruginosa interactions. An approximately 16-kDa **nonpilus protein** component(s) of P. aeruginosa was found to be the adhesin(s) for HTBM. The mucin receptor for the 16-kDa component(s) was found in the peptide moiety. This study confirms that P. aeruginosa utilizes the nonpilus adhesin(s) to bind to HTBM. Identification of the specificity of the HTBM-P. aeruginosa interactions can lead to a better understanding of the predominance of P. aeruginosa colonization in individuals with cystic fibrosis.

L36 ANSWER 32 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1991:381461 BIOSIS
DOCUMENT NUMBER: BR41:53851
TITLE: AF-R1 **PILUS PROTEIN** REMAINS IMMUNOGENIC TO RABBIT PEYER'S PATCH CELLS IMMUNIZED IN-VITRO AFTER MICROENCAPSULATION.
AUTHOR(S): DAVIS D; REID R H; SAU K
CORPORATE SOURCE: WALTER REED ARMY INST. RES., WASHINGTON, D.C. 20307.
SOURCE: 91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY 1991, DALLAS, TEXAS, USA, MAY 5-9, 1991. ABSTR GEN MEET AM SOC MICROBIOL, (1991) 91 (0), 132. CODEN: AGMME8.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 33 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:324961 BIOSIS
DOCUMENT NUMBER: BR39:32297
TITLE: ENHANCED LYMPHOCYTE **ANTIBODY** RESPONSE BY MUCOSAL IMMUNIZATION OF RABBITS WITH MICROENCAPSULATED AF-RI **PILUS PROTEIN**.
AUTHOR(S): DAVIS D; REID R; SAU K; LITTLE C; MCQUEEN C; BOEDEKER E; HUDSON M; TICE T; GILLEY R
CORPORATE SOURCE: WALTER REED ARMY INST. RES., WASHINGTON, D.C. 20307, USA.
SOURCE: JOINT MEETING OF THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY AND THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS, NEW ORLEANS, LOUISIANA, USA, JUNE 4-7, 1990. FASEB (FED AM SOC EXP BIOL) J, (1990) 4 (7), A1865. CODEN: FAJOEC. ISSN: 0892-6638.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 34 OF 67 MEDLINE on STN DUPLICATE 16
ACCESSION NUMBER: 90354781 MEDLINE
DOCUMENT NUMBER: 90354781 PubMed ID: 1974915
TITLE: The pili of Aeromonas hydrophila: identification of an environmentally regulated "mini pilin".
AUTHOR: Ho A S; Mietzner T A; Smith A J; Schoolnik G K
CORPORATE SOURCE: Division of Geographic Medicine, Howard Hughes Medical Institute, Stanford, California.
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE, (1990 Sep 1) 172 (3) 795-806.
Journal code: 2985109R. ISSN: 0022-1007.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199009
ENTRY DATE: Entered STN: 19901026
Last Updated on STN: 19990129
Entered Medline: 19900927

AB Ultrastructural studies of Aeromonas hydrophila strain AH26 revealed two distinctive pilus types: "straight" pili appear as brittle, rod-like filaments, whereas "flexible" pili are supple and curvilinear. Straight pili are produced constitutively under all tested conditions of growth. In contrast, the expression of flexible pili is regulated by physical and chemical variables, being produced at 22 vs. 37 degrees C, in a liquid vs. a solid medium, and when the availability of free-iron is reduced by the presence of deferoxamine mesylate. Both **pilus proteins**

were purified and biochemically and functionally characterized. The major repeating subunit of the straight pilus is a 17,000-mol wt polypeptide with amino acid sequence homology with Escherichia coli type 1 and Pap pili. The flexible pilus filament is a homopolymer composed of a novel 46 amino acid polypeptide. Resistance of the flexible pilus filament to disaggregation using various chemical **treatments** was demonstrated; its stability as a polymer and its apparent mechanical strength seem to be conferred by a 20 amino acid hydrophobic, COOH-terminal domain. Purified straight pili lack hemagglutinating function. In contrast, purified flexible pili cause the agglutinin of human, guinea pig, ovine, bovine, and avian erythrocytes, although this property could only be demonstrated in the presence of divalent cations and was most evident at 4 vs. 22 degrees C. Taken together, these results suggest that the pathogenic and ecological roles of the flexible pilus are related to this species' existence as a free-living organism in aquatic environments and its ability to cause infections, both in cold-blooded vertebrates and the human intestine.

L36 ANSWER 35 OF 67 MEDLINE on STN DUPLICATE 17
ACCESSION NUMBER: 91188716 MEDLINE
DOCUMENT NUMBER: 91188716 PubMed ID: 1982033
TITLE: Iscom (immunostimulating complex) **vaccines** containing mono- or polyvalent pili of enterotoxigenic E. coli; immune response of rabbit and swine.
AUTHOR: Nagy B; Hoglund S; Morein B
CORPORATE SOURCE: Central Veterinary Institute, Budapest, Hungary.
SOURCE: ZENTRALBLATT FUR VETERINARMEDIZIN. REIHE B, (1990 Dec) 37 (10) 728-38.
Journal code: 0331325. ISSN: 0514-7166.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199105
ENTRY DATE: Entered STN: 19910526
Last Updated on STN: 20030218
Entered Medline: 19910506

AB Iscom (immunostimulating complex) **vaccines** were prepared to contain K88ab, K88ac, K99 and 987P pili (fimbriae) of enterotoxigenic E. coli bacteria as monovalent or quadrivalent preparations. The iscoms injected into rabbits and into pigs elicited similar or higher immune response in both animal species than the oil adjuvanted **vaccine** containing about 5 times more of the same **pilus protein** . It is concluded that inclusion of pili into iscoms results in immunogenic preparations likely worth pursuing for **vaccine** production against enterotoxic colibacillosis of newborn pigs. The iscoms did not induce local reaction at the injection sites in contrast to the oil adjuvanted **vaccines**.

L36 ANSWER 36 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1989-122212 [16] WPIDS
DOC. NO. CPI: C1989-054262
TITLE: **Vaccine** against infectious bovine keratoconjunctivitis - contg. cyanogen bromide cleavage fragments of pili of a pathogenic strain of Moraxella bovis.
DERWENT CLASS: B04 C03 D16
PATENT ASSIGNEE(S): (UYTE-N) UNIV TENNESSEE RES CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 4818528	A	19890404	(198916)*		5

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 4818528	A	US 1987-11991	19870206

PRIORITY APPLN. INFO: US 1987-11991 19870206
AN 1989-122212 [16] WPIDS
AB US 4818528 A UPAB: 19930923
A **vaccine** against infectious bovine keratoconjuctivitas (IBK) is claimed comprising a **carrier** and protein fragments derived from individual pili of a pathogenic strain of Moraxella bovis by cleaving such pili with cyanogen bromide. Each protein fragment includes at least one antigenic site exposed in the course of the cleavage and which is common to the pili proteins of multiple pathogenic strains of Moraxella bovis. The protein fragments are capable of inducing the prodn. of **antibodies** reactive to the antigenic site, the **antibodies** being nonspecific to the Moraxella bovis strain from which the protein fragments originated.

The M.bovis strains may be e.g. NPTn, EPP-63, IBH-64 or FLA-64.

Alternatively a DNA sequence encoding the common antigenic sites can be cloned and the DNA expressed in a suitable host to produce the protein fragments.

USE/ADVANTAGE - The cleavage of pilin proteins with CNBr exposes immunogenic determinants which are immunorecessive on the uncleaved **pilus protein** but are common to all strains fo M.bovis. Cattle are inoculated with the **vaccines** to develop immunity against infection by homologous and heterologous strains of M.bovis. 0/0

L36 ANSWER 37 OF 67 MEDLINE on STN
ACCESSION NUMBER: 90021098 MEDLINE
DOCUMENT NUMBER: 90021098 PubMed ID: 2477941
TITLE: Generation, maintenance and reactivity of ovine T-lymphocyte clones derived from sheep immunized with pili from Bacteroides nodosus.
AUTHOR: Emery D L; Rothel J S; Kirkpatrick A; Maclaren J A
CORPORATE SOURCE: CSIRO, Division of Animal Health, McMaster Laboratory, Australia.
SOURCE: VETERINARY IMMUNOLOGY AND IMMUNOPATHOLOGY, (1989 Jul) 21 (3-4) 339-49.
Journal code: 8002006. ISSN: 0165-2427.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198911
ENTRY DATE: Entered STN: 19900328
Last Updated on STN: 19960129
Entered Medline: 19891109
AB Peripheral blood leucocytes (PBL) from sheep immunized with **pilus protein** purified from Bacteroides nodosus serogroup A were cultivated in vitro and cloned in the presence of the specific antigen and autologous antigen-presenting cells (APC). The efficiency of cloning was

enhanced by high proliferative responses to pili during the initial week of cultivation, and the provision of recombinant human interleukin-2 (rec-IL-2). After three passages at weekly intervals, bulk cultures of PBL and cloned T-lymphocytes were greater than 99% CD4+, CD8-, sIg-, i.e. the characteristic phenotype of helper T-lymphocytes. Cloned T-lymphocytes were devoid of allo-reactivity, and were restricted by class II antigens of the major histocompatibility complex (MHC). Both bulk PBL and cloned T-lymphocytes exhibited similar patterns of reactivity against pili from different serogroups of B. nodosus and the T-lymphocytes reacted to three of six peptides synthesized from the amino-acid sequence of pilus from serogroup A. Although clones of T-lymphocytes could retain antigen specificity for up to 2 months of cultivation, several attempts to recover clones with specific reactivity after storage in liquid nitrogen were unsuccessful.

L36 ANSWER 38 OF 67 MEDLINE on STN DUPLICATE 18
ACCESSION NUMBER: 89211887 MEDLINE
DOCUMENT NUMBER: 89211887 PubMed ID: 2468557
TITLE: Regulatory genes in the thermoregulation of Escherichia coli pili gene transcription.
AUTHOR: Goransson M; Forsman K; Uhlin B E
CORPORATE SOURCE: Department of Microbiology, University of Umea, Sweden.
SOURCE: GENES AND DEVELOPMENT, (1989 Jan) 3 (1) 123-30.
Journal code: 8711660. ISSN: 0890-9369.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198906
ENTRY DATE: Entered STN: 19900306
Last Updated on STN: 19960129
Entered Medline: 19890602

AB Expression of several different pilus adhesins by Escherichia coli is subject to thermoregulation. The surface-located fimbrial structures are present during growth at 37 degrees C but are not produced by cells grown at lower temperatures, such as 25 degrees C. As a step toward understanding the molecular mechanism, we have studied the role of different cistrons of a cloned pilus adhesin gene cluster (pap) from a uropathogenic E. coli isolate. By promoter cloning, mRNA analysis, and expression of subcloned genes in trans, we have identified the papI gene as the mediator of thermoregulation at the level of pilus adhesin gene transcription. Expression of the major pilus subunit gene (**papA**) and several other **pilus protein** cistrons appeared to be dependent on stimulation by the papB and papI gene products. Constructs carrying different pap DNA regions indicated that none of the known Pap proteins acts directly as thermosensor. The chromosomal rpoH gene and RpoH sigma factor did not appear to be required for pap transcription, and the thermoregulation of pilus gene transcription must be different from that of the heat shock regulon. By overexpressing the papI gene product from an expression plasmid in trans, we could circumvent the temperature regulation and turn on production of pilus adhesin at low temperature. Our results suggest that the level of mRNA encoding the PapI activator is limiting at low growth temperatures and that thermoregulation is due to a determinant in the papI-papB intercistronic region.

L36 ANSWER 39 OF 67 MEDLINE on STN DUPLICATE 19
ACCESSION NUMBER: 89253548 MEDLINE
DOCUMENT NUMBER: 89253548 PubMed ID: 2470668
TITLE: Monoclonal **antibodies** defining immunogenic regions of pili from Bacteroides nodosus strains 198 (A1),

265 (H1) and 336 (F1).
AUTHOR: Young D; Emery D L; Stewart D J
CORPORATE SOURCE: CSIRO Division of Animal Health, Parkville, Vic., Australia.
SOURCE: IMMUNOLOGY AND CELL BIOLOGY, (1989 Feb) 67 (Pt 1) 71-8. Journal code: 8706300. ISSN: 0818-9641.
PUB. COUNTRY: Australia
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198907
ENTRY DATE: Entered STN: 19900306
Last Updated on STN: 19960129
Entered Medline: 19890710

AB A total of 17 monoclonal **antibodies** (MoAb) were used to analyse the antigenic structure of **pilus protein** from three serogroups of Bacteroides nodosus. The four MoAb which agglutinated pili were serogroup (and subgroup) specific, and the agglutinating epitope was present on the pili monomer and dependent on the intra-chain disulfide bond. Non-agglutinating MoAb identified two further non-linear and serogroup-restricted epitopes on strain 198 (A1) pili and two linear epitopes on 336 (F1) and 265 (H1) pili. Three MoAb cross-reacted with pili from six of the eight major serogroups and recognized an epitope in the N-terminal region of the molecule. This panel of MoAb has therefore identified at least four epitopes on **pilus protein** and will facilitate serotopic analyses of the immunogenicity of each epitope in sheep during **vaccination** against footrot.

L36 ANSWER 40 OF 67 MEDLINE on STN DUPLICATE 20
ACCESSION NUMBER: 88169520 MEDLINE
DOCUMENT NUMBER: 88169520 PubMed ID: 2895103
TITLE: Structure and antigenic properties of the tip-located P **pilus proteins** of uropathogenic Escherichia coli.
AUTHOR: Lund B; Lindberg F; Normark S
CORPORATE SOURCE: Department of Microbiology, University of Umea, Sweden.
SOURCE: JOURNAL OF BACTERIOLOGY, (1988 Apr) 170 (4) 1887-94. Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-M20146; GENBANK-M20181; GENBANK-M20182
ENTRY MONTH: 198805
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 1995(
Entered Medline: 19880512

AB Pyelonephritogenic Escherichia coli freq to Gal alpha (1-4)Gal receptors present these pili is mediated by a pilus-associ **PapG**, and not by the major subunit whic the pilus structure. The adhesin and t and **PapF**, are present in only a few cop tip. Surface exposure of both **PapF** and required to achieve receptor-specific h for the genes encoding the tip-associa **PapF**, and **PapG** were determined for two expressing P pili of serotypes F11 and corresponding sequences established for prote... antisera were used to study the cross-reactivity between the...

proteins and the equivalent proteins in F11 and F7(2) pili. We present data showing that, like the major pilus subunit, **PapE** varies its structure and antigenic properties among pili of different serotypes. In contrast, the **PapF** protein was highly conserved, and **PapF**-specific antisera raised against serotype F13 cross-reacted with the **PapF** proteins of both F11 and F7(2) serotypes. The **PapG adhesin** protein from F11 and F7(2) pili differed by only five amino acids out of 316 residues. However, the F13 adhesin showed only 45% amino acid homology with the other two variants.

L36 ANSWER 41 OF 67 MEDLINE on STN DUPLICATE 21
ACCESSION NUMBER: 88186168 MEDLINE
DOCUMENT NUMBER: 88186168 PubMed ID: 2895739
TITLE: Structural and serological relatedness of Haemophilus influenzae type b pili.
AUTHOR: LiPuma J J; Gilsdorf J R
CORPORATE SOURCE: Department of Pediatrics and Communicable Diseases, C. S. Mott Children's Hospital, University of Michigan Medical Center, Ann Arbor 48109.
CONTRACT NUMBER: AI-20934-03 (NIAID)
SOURCE: INFECTION AND IMMUNITY, (1988 May) 56 (5) 1051-6. Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198805
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19970203
Entered Medline: 19880526

AB The structural and serological relatedness of the **pilus proteins** of several isolates of Haemophilus influenzae type b cultured from **patients** with invasive disease and from different anatomic sites within the same **patient** was examined. Epithelial cell-adherent variants of 25 nonadherent parent isolates were obtained by selection for organisms that adhered to human erythrocytes. Outer membrane protein analysis by sodium dodecyl sulfate-polyacrylamide gel electrophoresis revealed the presence of an additional 24- to 24.5-kilodalton protein among all adherent variants but absent from all nonadherent parent isolates. Polyclonal rabbit antiserum against the intact native **pilus protein** of H. influenzae M43 cross-reacted with 20 of 25 adherent H. influenzae in both immunodot and slide-agglutination assays. No differences in reactivity among isolates cultured from more than one anatomic site in the same **patient** were noted. Anti-M43 pilus antiserum had bactericidal activity against both the homologous strain and a heterologous strain that demonstrated serologic identity in the immunodot and slide agglutination assays. The adherence of these strains to human epithelial cells in vitro was inhibited by Fab fragments purified from the antipilus antiserum. These data indicate that a remarkable degree of homogeneity in pilin subunit size exists among the pili of H. influenzae type b and that major **antigenic determinants** are shared among most of these pili. Also, **antibodies** directed against H. influenzae **pilus proteins** may be able to contribute to host defenses through serum bactericidal activity and by blocking the adherence of this bacterium to host epithelial cells.

L36 ANSWER 42 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1988:366906 BIOSIS
DOCUMENT NUMBER: BR35:51519

TITLE: PRIMARY IN-VITRO HUMAN **ANTIBODY** RESPONSE TO AMINO-TERMINAL PEPTIDE OF CFA-I RECOGNIZES THE **PILUS PROTEIN**.
AUTHOR(S): REID R; ENGLER R; FERREN P; DAVIS D; SAU K; HENSEN S; FISCHER G; BOEDEKER E
CORPORATE SOURCE: DEP. GASTROENTEROL., WALTER REED ARMY INST. RES., WASHINGTON, D.C., USA.
SOURCE: 89TH ANNUAL MEETING OF THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION, NEW ORLEANS, LOUISIANA, USA, MAY 14-20, 1988. GASTROENTEROLOGY, (1988) 94 (5 PART 2), A372. CODEN: GASTAB. ISSN: 0016-5085.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 43 OF 67 MEDLINE on STN DUPLICATE 22
ACCESSION NUMBER: 88156961 MEDLINE
DOCUMENT NUMBER: 88156961 PubMed ID: 2894612
TITLE: Identification and characterization of E. coli type-1 pilus tip adhesion protein.
AUTHOR: Hanson M S; Brinton C C Jr
CORPORATE SOURCE: Department of Biological Sciences, University of Pittsburgh, Pennsylvania 15260.
SOURCE: NATURE, (1988 Mar 17) 332 (6161) 265-8. Journal code: 0410462. ISSN: 0028-0836.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198804
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19950206
Entered Medline: 19880420

AB The type-1 pilus of Escherichia coli is the prototype of this class of hair-like, multimeric adhesive organelles. This pilus mediates adherence to mannose-containing receptors on mucosal epithelia and other cells. The type-1 pilus, in one of several serological variants, is expressed by nearly all E. coli strains, and its promotion of colonization by pathogenic bacteria and the protective effects of purified pilus **vaccines** suggest that it is important as a bacterial virulence factor. Both the adhesive function and the serological variation of the type-1 pilus have been attributed to the thousand or so pilin protein monomers making up the pilus rods. This idea has been contradicted by our earlier observations on an E. coli strain expressing adhesion-defective pili. More recent genetic evidence also indicates that auxiliary **pilus proteins** are required for adhesive function. We report here the identification of three previously undetected integral minor proteins on the type-1 pilus, and show that one of them is the receptor-binding adhesin. This protein is antigenically conserved among strains with different pilin serotypes and is located at the pilus tip.

L36 ANSWER 44 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1988:342623 BIOSIS
DOCUMENT NUMBER: BR35:37465
TITLE: PRIMARY IN-VITRO **ANTIBODY** RESPONSE TO THE AMINO TERMINAL 1-13 PEPTIDE OF CFA-I RECOGNIZES THE **PILUS PROTEIN**.
AUTHOR(S): DAVIS D; REID R; FERREN P; ANDREWS G; TSENG L; SAU K; BOEDEKER E
CORPORATE SOURCE: DEP. GASTROENTEROL., WALTER REED ARMY INST. RES.,

WASHINGTON, D.C.
SOURCE: ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, MIAMI BEACH, FLORIDA, USA, MAY 8-13, 1988. ABSTR ANNU MEET AM SOC MICROBIOL, (1988) 88 (0), 111.
CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 45 OF 67 MEDLINE on STN DUPLICATE 23
ACCESSION NUMBER: 88162723 MEDLINE
DOCUMENT NUMBER: 88162723 PubMed ID: 2894825
TITLE: Antigenic relatedness and partial amino acid sequences of pili of Escherichia coli serotypes O1, O2, and O78 pathogenic to poultry.
AUTHOR: Suwanichkul A; Panigrahy B; Wagner R M
CORPORATE SOURCE: Department of Veterinary Microbiology and Parasitology, College of Veterinary Medicine, Texas A&M University, College Station 77843.
SOURCE: AVIAN DISEASES, (1987 Oct-Dec) 31 (4) 809-13.
Journal code: 0370617. ISSN: 0005-2086.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198804
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19950206
Entered Medline: 19880411
AB **Pilus proteins** from Escherichia coli serotypes O1, O2, and O78 pathogenic to poultry were compared with regard to their antigenic relatedness and partial amino acid sequences. Agglutination, immunodiffusion, and immunoblot assays with polyclonal **antibodies** to these pili showed that these pili not only share some common antigens but also contain antigens unique to each pilus. The partial amino-terminal amino acid sequences support our earlier findings that the pili are different but contain some structural homologies.

L36 ANSWER 46 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1988:191302 BIOSIS
DOCUMENT NUMBER: BR34:94489
TITLE: CONSERVED GONOCOCCAL SURFACE ANTIGENS.
AUTHOR(S): GOTSCHLICH E C
CORPORATE SOURCE: DEP. BACTERIOLOGY AND IMMUNOLOGY, ROCKEFELLER UNIV., 1230 YORK AVENUE, NEW YORK, N.Y. 10021-6399.
SOURCE: SCLAVO INTERNATIONAL CONFERENCE ON BACTERIAL VACCINES AND LOCAL IMMUNITY, SIENA, ITALY, NOVEMBER 17-19, 1986. ANN SCLAVO, (1986 (1987)) 0 (1-2), 415-426.
CODEN: ASCLAZ. ISSN: 0003-472X.
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 47 OF 67 MEDLINE on STN DUPLICATE 24
ACCESSION NUMBER: 87127789 MEDLINE
DOCUMENT NUMBER: 87127789 PubMed ID: 2880577
TITLE: Immunogenicity of an Escherichia coli multivalent pilus **vaccine** in chickens.
AUTHOR: Gyimah J E; Panigrahy B; Williams J D
SOURCE: AVIAN DISEASES, (1986 Oct-Dec) 30 (4) 687-9.
Journal code: 0370617. ISSN: 0005-2086.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198703
ENTRY DATE: Entered STN: 19900303
Last Updated on STN: 19950206
Entered Medline: 19870320

AB Immunogenicity of an oil-emulsified Escherichia coli multivalent pilus **vaccine** was evaluated in 4-week-old chickens. The **vaccine** contained 180 micrograms of **pilus protein** from each of serotypes O1 and O78 and 170 micrograms of **pilus protein** from serotype O2. Chickens were **vaccinated** twice subcutaneously at 4 and 6 weeks old and challenged via the posterior thoracic air sac with E. coli serotype O1, O2, or O78 2 weeks after the last **vaccination**. **Unvaccinated** challenged chickens suffered 8% to 26% mortality; no **vaccinated** chickens died. **Vaccinated** chickens had very mild gross lesions in the air sacs, livers, and pericardial sacs and eliminated E. coli more efficiently than the **unvaccinated** challenged chickens. The results showed that a multivalent pilus **vaccine** protects chickens against active respiratory infection.

L36 ANSWER 48 OF 67 MEDLINE on STN DUPLICATE 25
ACCESSION NUMBER: 87033391 MEDLINE
DOCUMENT NUMBER: 87033391 PubMed ID: 3533890
TITLE: Inhibition of K88-mediated adhesion of Escherichia coli to mammalian receptors by **antibiotics** that affect bacterial protein synthesis.
AUTHOR: Chopra I; Hacker K
SOURCE: JOURNAL OF ANTIMICROBIAL CHEMOTHERAPY, (1986 Oct) 18 (4) 441-51.
Journal code: 7513617. ISSN: 0305-7453.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198612
ENTRY DATE: Entered STN: 19900302
Last Updated on STN: 19900302
Entered Medline: 19861218

AB The ability of ten inhibitors of bacterial protein synthesis to decrease adhesion of Escherichia coli bearing K88ac fimbriae was examined. In the presence of the **antibiotics** at concentrations below the MIC values neomycin was the least effective inhibitor of adhesion and minocycline the most active. The effect of minocycline on the synthesis of individual polypeptides encoded by the K88ac determinant was examined in detail. The rate of synthesis of K88ac **pilus protein** in the presence of minocycline 0.75 mg/l (0.5 MIC) was less than that of total cell protein synthesis, suggesting that **pilus protein** becomes progressively 'diluted' in the outer membrane during exposure to this **antibiotic** concentration. Furthermore, the synthesis of two 'helper' polypeptides (molecular weights of 27.5 K and 27 K) which are probably involved in secretion of K88ac **pilus protein** through the cell envelope, was particularly sensitive to minocycline. Our observations suggest that the ability of translational inhibitors to decrease K88ac mediated adhesion probably results from direct inhibition of synthesis of fimbrial protein itself, together with inhibition of 'helper' polypeptide synthesis.

L36 ANSWER 49 OF 67 MEDLINE on STN DUPLICATE 26
ACCESSION NUMBER: 86272861 MEDLINE
DOCUMENT NUMBER: 86272861 PubMed ID: 2873911
TITLE: Fimbriae (pili): molecular basis of Pseudomonas aeruginosa adherence.
AUTHOR: Paranchych W; Sastry P A; Volpel K; Loh B A; Speert D P
SOURCE: CLINICAL AND INVESTIGATIVE MEDICINE. MEDECINE CLINIQUE ET EXPERIMENTALE, (1986) 9 (2) 113-8.
Journal code: 7804071. ISSN: 0147-958X.
PUB. COUNTRY: Canada
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198609
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19950206
Entered Medline: 19860916

AB Pseudomonas aeruginosa produces polar pili which promote the adherence of the organism to host mucosal surfaces and to blood-borne phagocytic cells such as polymorphonuclear leukocytes. Pseudomonas polar pili are flexible filaments of 52 A diameter and 2500 nm average length. They consist of a single type of protein subunit, pilin, of molecular weight 15,000, which is arranged in a helical mode of 5 subunits per turn and a pitch of 41 A. Purified whole pili, and anti-pilus antiserum both inhibited the interaction of Pseudomonas aeruginosa strains with human buccal epithelial cells and PMNs, suggesting that Pseudomonas adherence to these mammalian cells is pilus mediated. No correlation was found between the level of cell surface fibronectin on human buccal endothelial cells and the adherence of Pseudomonas bacteria. Pseudomonas adherence to buccal endothelial cells obtained from **patients** with cystic fibrosis was somewhat less than that to buccal endothelial cells obtained from healthy individuals. Fibronectin levels on buccal endothelial cells from **patients** with cystic fibrosis were not significantly different than those found on buccal endothelial cells from healthy individuals. Studies with peptide fragments derived from purified pili showed that only one peptide encompassing 23 amino acid residues at the C-terminus of the **pilus protein** was able to inhibit in vitro adherence of P. aeruginosa PAK to human buccal cells. This peptide domain was tentatively assigned the receptor-binding function.

L36 ANSWER 50 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1985-276134 [44] WPIDS
DOC. NO. NON-CPI: N1985-206069
DOC. NO. CPI: C1985-119959
TITLE: New polypeptide smaller than gonococcal pilin protein - includes 5 to 60 aminoacid residues and useful in **vaccines** against gonorrhoea and for producing **antibodies** for assay of the **pilus protein**.
DERWENT CLASS: B04 D16 P31 S03 S05
INVENTOR(S): AGBLOM, P O; DEAL, C D; MAGDALENE, Y H
PATENT ASSIGNEE(S): (SCRI-N) SCRIPPS CLINIC & RE; (SOMY-I) SO M Y H
COUNTRY COUNT: 19
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 8504654	A	19851024	(198544)*	EN	44
RW: AT BE CH DE FR GB IT LU NL SE					
W: AU DK FI JP NO US					

ZA 8502629 A 19851015 (198602)
AU 8541590 A 19851101 (198607)
EP 177583 A 19860416 (198616) EN
R: AT BE CH DE FR GB IT LI LU NL SE
NO 8504903 A 19860303 (198616)
FI 8504839 A 19851205 (198640)
JP 61501777 W 19860821 (198640)
DK 8505652 A 19851205 (198645)
IL 74829 A 19890228 (198921)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8504654	A	WO 1985-US565	19850404
ZA 8502629	A	ZA 1985-2629	19850409
JP 61501777	W	JP 1985-501646	19850404

PRIORITY APPLN. INFO: US 1984-597434 19840406
AN 1985-276134 [44] WPIDS
AB WO 8504654 A UPAB: 19930925
Polypeptide (I) smaller than a naturally occurring gonococcal pilin protein and including an amino acid residue sequence of 5-60 amino acid residues and its salts are new. It is capable of immunologically mimicking a conserved **antigenic determinant** site in a variable region of the carboxy terminal half of a gonococcal pilin.
(I) contains up to 60 amino acid residues and includes from left to right in the direction from amino to carboxy termina, a residue of formula -X1-X2-X3-X4-X5- (II) X1=His, Lys or Arg; X2,X3=Leu, Pro, Trp, Phe, Val, Ala or Ile; X4, X5=Ser, Thr, Cys or Gly.
USE/ADVANTAGE - (I) is useful in a **vaccine** for the **prevention** of gonorrhoea. It may also be used in the assay of Neisseria gonorrhoeae **pilus protein**, when (I) is administered to an animal host to give a receptor, esp. whole **antibody** or an **antibody** combining site, to the (I). Dose is 10 micrograms-100 mg (I) per unit of **vaccine**.
0/0

L36 ANSWER 51 OF 67 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1985-284718 [46] WPIDS
DOC. NO. CPI: C1985-123209
TITLE: **Vaccines** against **urinary tract infections** - contg. new E. coli gal-gal **pilus protein** or fragments.
DERWENT CLASS: B04 D16
INVENTOR(S): FALKOW, S; LARK, D; OHANLEY, P; SCHOOLNIK, G
PATENT ASSIGNEE(S): (STRD) UNIV LELAND STANFORD JUNIOR
COUNTRY COUNT: 15
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 161095	A	19851113	(198546)*	EN	29
R: AT BE CH DE FR GB IT LI LU NL SE					
AU 8541851	A	19851107	(198601)		
JP 61000022	A	19860106	(198607)		
US 4736017	A	19880405	(198816)		
CA 1261550	A	19890926	(198945)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 161095	A	EP 1985-303016	19850429
JP 61000022	A	JP 1985-94545	19850430
US 4736017	A	US 1984-605287	19840430

PRIORITY APPLN. INFO: US 1984-605287 19840430
AN 1985-284718 [46] WPIDS
AB EP 161095 A UPAB: 19930925
(A) Pilus **vaccines** for **treating urinary tract infections** in humans contain a polypeptide with an amino acid sequence corresp. to at least one **antigenic determinant** of Gal-Gal **pilus protein**.
(B) E.coli HU849 Gal-Gal **pilus protein** (I), comprising a sequence of 163 amino acid, and the 79-110, 15-70, 133-163 and 111-125 fragments of (I) are new.
(I) may be obtained by (a) isolation and purification from E. coli HU849 pili, (b) peptide synthesis, or (c) recombinant DNA technology using the appropriate DNA coding sequence.
ADVANTAGE - (I) and its fragments are highly effective and specific in generating **antibodies** to urinary pathogens and are obtainable in practical amts. and in pure form.
1/2
ABEQ US 4736017 A UPAB: 19930925
Immunogenic peptide comprises at least 15 aminoacids of defined sequence, corresp. to one or more **antigenic determinants** of Escherichia coli Gal-Gal **pilus protein**.
USE - The prods. and their active fragments are dispersed with the usual pharmaceutical **carriers** and opt. additives to provide a **vaccine** which gives protection against urinary infections.

L36 ANSWER 52 OF 67 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 85195079 EMBASE
DOCUMENT NUMBER: 1985195079
TITLE: **Urinary tract infection** during pregnancy.
SOURCE: Lancet, (1985) 2/8448 (190-192).
CODEN: LANCAO
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal
FILE SEGMENT: 010 Obstetrics and Gynecology
028 Urology and Nephrology
004 Microbiology
LANGUAGE: English
AB All that can be surmised is that, with the possible exception of the association of premature labour and acute pyelonephritis, the assocation of **UTI** and adverse fetal effects is controversial. New approaches are needed so that the mechanisms of the various adverse outcomes can be examined. Further studies must be directed towards defining host-parasite relationships in the urinary tract, including the bactericidal and bacteristatic characteristics of urine, the presence of humoral **antibodies** to urinary pathogens, and the biochemistry of the urinary pathogens. One example of a new approach is the demonstration that various microorganisms, including Escherichia coli, contain phospholiase A2, an enzyme critical in the synthesis of prostaglandins and in the initation of labour. Another is the discovery that uropathogenic E

coli strains colonise epithelial surfaces by elaborating proteinaceous appendages (pili), and the ability to use purified **pilus protein** to assess the mechanisms of bacterial colonisation and invasion in the renal tract. Unless new approaches are devised the controversies and uncertainties are set to continue.

L36 ANSWER 53 OF 67 MEDLINE on STN
ACCESSION NUMBER: 85223999 MEDLINE
DOCUMENT NUMBER: 85223999 PubMed ID: 2408561
TITLE: Pseudomonas pili. Studies on **antigenic determinants** and mammalian cell receptors.
AUTHOR: Paranchych W; Sastry P A; Drake D; Pearlstone J R; Smillie L B
SOURCE: ANTIBIOTICS AND CHEMOTHERAPY, (1985) 36 49-57.
Journal code: 1305576. ISSN: 0066-4758.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198506
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19990129
Entered Medline: 19850627

AB P. aeruginosa PAK pili are thin 5.2 nm diameter filaments containing a single 15-kd polypeptide subunit which is 144 amino acid residues in length. Studies on pili binding to a variety of synthetic sugars representing many di- tri- and tetra-saccharide structures found in mammalian glycoproteins and glycolipids failed to reveal any significant binding activity. On the other hand, a wide spectrum of binding activities was observed when a variety of structural proteins and enzymes were used as binding substrates. Of 30 proteins tested, phosphorylase b, pyruvate kinase and aldolase showed highest pilus binding activity. It was concluded that the PAK pilus receptor is probably a polypeptide rather than an oligosaccharide. Using arginine-specific cleavage to produce four large peptides, several proteases to produce subfragments of the large peptides, and antipilus rabbit antiserum, PAK pilin was found to contain four **antigenic determinants**. Epitopes near the NH2- and COOH-termini were only weakly immunogenic, whereas two epitopes near the center of the **pilus protein** titrated about 85% of the antipilus **antibodies**. Cleavage of the **pilus protein** into smaller peptides resulted in marked decreases in the affinity of antigenic peptides for their specific **antibodies**, suggesting that the immunodominant epitopes of PAK pilin are conformation-specific.

L36 ANSWER 54 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1985:120582 BIOSIS
DOCUMENT NUMBER: BR29:10578
TITLE: RECOMBINANT **VACCINE** TO **PREVENT URINARY TRACT INFECTIONS.**
AUTHOR(S): HESTER A S
CORPORATE SOURCE: 32 N. DEAN ST., ENGLEWOOD, NJ 07631, USA.
SOURCE: Genet. Technol. News, (1985) 5 (4), 8.
CODEN: GTNEEA. ISSN: 0272-9032.
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 55 OF 67 MEDLINE on STN DUPLICATE 27
ACCESSION NUMBER: 85107083 MEDLINE
DOCUMENT NUMBER: 85107083 PubMed ID: 6151587

TITLE: On the role of pili in transformation of Neisseria gonorrhoeae.
AUTHOR: Mathis L S; Scocca J J
CONTRACT NUMBER: 1 POI AI 16969 (NIAID)
SOURCE: JOURNAL OF GENERAL MICROBIOLOGY, (1984 Dec) 130 (Pt 12) 3165-73.
Journal code: 0375371. ISSN: 0022-1287.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198503
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19990129
Entered Medline: 19850314

AB Transformation of competent transformable Neisseria gonorrhoeae F62 to streptomycin resistance was unaffected by **antibodies** directed against the **pilus protein** (pilin) of this organism. The pilin component of either crude or purified pilus preparations, separated by SDS gel electrophoresis and transferred to nitrocellulose, failed to bind detectable amounts of DNA; DNA binding to other gonococcal polypeptides was observed under these conditions. These results suggest that gonococcal pilin does not play a direct role in gonococcal transformation.

L36 ANSWER 56 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1985:260634 BIOSIS
DOCUMENT NUMBER: BA79:40630
TITLE: ULTRASTRUCTURAL LOCALIZATION OF SPECIFIC GONOCOCCAL MACROMOLECULES WITH **ANTIBODY**-GOLD SPHERE IMMUNOLOGICAL PROBES.
AUTHOR(S): ROBINSON E N JR; MCGEE Z A; KAPLAN J; HAMMOND M E; LARSON J K; BUCHANAN T M; SCHOOLNIK G K
CORPORATE SOURCE: CENTER INFECTIOUS DISEASES, DIAGNOSTIC MICROBIOLOGY AND IMMUNOLOGY, DEPARTMENT MEDICINE, UNIVERSITY UTAH SCHOOL MEDICINE, SALT LAKE CITY, UTAH 84132.
SOURCE: INFECT IMMUN, (1984) 46 (2), 361-366.
CODEN: INFIBR. ISSN: 0019-9567.
FILE SEGMENT: BA; OLD
LANGUAGE: English

AB In an effort to determine the ultrastructural location of specific macromolecules on the surface of intact microorganisms and in experimentally infected tissues, a new method of rapidly conjugating **antibodies** to Au spheres via a staphylococcal protein A intermediary was developed. This new technique provides the excellent density of marking and versatility of sphere size provided by existing Au methods, but decreases preparation time and the chance of bacterial contamination of **antibody** reagents and increases specificity of marking. Staphylococcal protein A-coated Au spheres were conjugated with **antibodies** from rabbits immunized with purified gonococcal pili. The resulting Au-**antibody** conjugates allowed demonstration of **antibody** binding to pilus structures of the same gonococcal strain whose pili were used to raise the **antibody** and demonstration of the lack of **antibody** recognition of pilus structures on 2 other gonococcal strains. The failure of Au spheres to attach to isogenic nonpiliated clones of the homologous gonococcus indicated the absence of pilus antigens on the surface of these organisms. The use of a double-label, small Au spheres conjugated to anti-pilus **antibody** and larger Au spheres conjugated to anti-protein I **antibody**, allowed the simultaneous localization of 2 gonococcal antigens.

L36 ANSWER 57 OF 67 MEDLINE on STN DUPLICATE 28
ACCESSION NUMBER: 84136236 MEDLINE
DOCUMENT NUMBER: 84136236 PubMed ID: 6142055
TITLE: Enzyme-linked immunosorbent assay with a monoclonal **antibody** for detecting group A meningococcal antigens in cerebrospinal fluid.
AUTHOR: Sugasawara R J; Prato C M; Sippel J E
SOURCE: JOURNAL OF CLINICAL MICROBIOLOGY, (1984 Feb) 19 (2) 230-4. Journal code: 7505564. ISSN: 0095-1137.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198404
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19950206
Entered Medline: 19840425

AB Hybridomas were produced from spleen cells of BALB/c mice immunized with a membrane preparation from Neisseria meningitidis group A strain 4402 and S194/5.XXOBU.14 myeloma cells. The hybridomas were screened for secretion of **antibodies** suitable for an enzyme-linked immunosorbent assay (ELISA) diagnostic for group A meningococcal meningitis. One hybridoma **antibody**, 3G7, was directed against the **pilus protein**. This **antibody** bound to all six lipopolysaccharide and protein group A meningococcal serotyping strains, as well as to meningococcal strains from serogroups C, W135, and Y, but not to a strain of Escherichia coli, Haemophilus influenzae type b, or to two or more strains of Streptococcus pneumoniae, Neisseria gonorrhoeae, and Salmonella typhi. The ELISA used on **antibody**, antigen, **antibody**-conjugate sandwich. Rabbit anti-meningococcal serum was the coating **antibody** for the **antibody** sandwich, cerebrospinal fluids contained the bacterial antigens, and 3G7-alkaline phosphatase conjugate was the detecting **antibody**. The monoclonal **antibody** conjugate ELISA system was able to detect group A meningococcal antigens in 21 of 25 cerebrospinal fluid specimens that were positive in an immune rabbit serum conjugate ELISA; cerebrospinal fluid samples from **patients** with Haemophilus meningitis served as the controls. Counterimmunoelectrophoresis detected meningococcal antigens in 16 of the same 25 cerebrospinal fluid samples.

L36 ANSWER 58 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1984:107303 BIOSIS
DOCUMENT NUMBER: BR27:23795
TITLE: CHARACTERIZATION OF THE MAJOR **ANTIGENIC DETERMINANT** OF THE EDP-208 **PILUS PROTEIN.**
AUTHOR(S): WOROBEC E; PARKER R; TANEJA A; HODGES R; PARANCHYCH W
CORPORATE SOURCE: UNIV. ALBERTA, EDMONTON, ALBERTA, CAN.
SOURCE: 84TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, ST. LOUIS, MO., USA, MAR. 4-9, 1984. ABSTR ANNU MEET AM SOC MICROBIOL, (1984) 84 (0), ABSTRACT B112. CODEN: ASMACK. ISSN: 0094-8519.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 59 OF 67 MEDLINE on STN DUPLICATE 29
ACCESSION NUMBER: 83108724 MEDLINE
DOCUMENT NUMBER: 83108724 PubMed ID: 6185467

TITLE: Localization of the major **antigenic determinant** of EDP208 pili at the N-terminus of the **pilus protein**.
AUTHOR: Worobec E A; Taneja A K; Hodges R S; Paranchych W
SOURCE: JOURNAL OF BACTERIOLOGY, (1983 Feb) 153 (2) 955-61.
Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198303
ENTRY DATE: Entered STN: 19900318
Last Updated on STN: 19990129
Entered Medline: 19830317

AB Trypsin digestion of pilin monomers from EDP208 conjugative pili causes cleavage of Lys12 to yield an N-terminal dodecapeptide, ET1 (Mr approximately equal to 1,500), and the remaining C-terminal fragment, ER (Mr approximately equal to 10,000). Using the amino acid sequence for ET1 provided by Frost et al. (J. Bacteriol. 153:950-954), we synthesized the N-terminal dodecapeptide chemically, conjugated it to bovine serum albumin, and subjected it to immunological studies. Antisera prepared against intact EDP208 pili as well as against the synthetic ET1-BSA conjugate were used in experiments involving an enzyme-linked immunosorbant assay and electrophoretic transfer of proteins from sodium dodecyl sulfate-polyacrylamide gels to nitrocellulose sheets. Both experimental approaches showed strong reactivity between the synthetic dodecapeptide and antiserum raised against whole pili. It was also found that antiserum raised against the synthetic peptide was reactive against intact **pilus protein**, indicating that the N-terminal dodecapeptide is an important **antigenic determinant** of the EDP208 **pilus protein**. Additional studies showed that the C-terminal fragment, ER, may contain one or two additional antigenic sites.

L36 ANSWER 60 OF 67 MEDLINE on STN DUPLICATE 30
ACCESSION NUMBER: 84087544 MEDLINE
DOCUMENT NUMBER: 84087544 PubMed ID: 6140254
TITLE: Quantitative test for Bacteroides nodosus **pilus protein** by an agglutination-absorption test.
AUTHOR: Every D
SOURCE: JOURNAL OF APPLIED BACTERIOLOGY, (1983 Oct) 55 (2) 305-13.
Journal code: 7503050. ISSN: 0021-8847.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198402
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19950206
Entered Medline: 19840224

AB A pili agglutination-absorption test (PAAT) was developed for the quantitative measurement of **pilus protein** in cultures of Bacteroides nodosus and to quantify pili yields during purifications. The test was calibrated by recording the amount of **pilus protein** required to absorb a measurable amount of anti-pili **antibody** from antiserum. The amount of anti-pilus **antibody** in absorbed and unabsorbed serum was specifically measured by a Bact. nodosus K-agglutination test. The PAAT could be calibrated using any combination of crude or pure pili preparations and specific anti-pili serum or non-specific anti-Bact. nodosus serum. This

had advantages over the use of radioimmunoassay (RIA) and enzyme-linked immunosorbent assay (ELISA) techniques for measurement of pili because they require the use of highly purified reagents for calibration. The minimum quantity of **pilus protein** measurable by PAAT was 0.1 microgram per test which was similar in sensitivity to that reported for RIA and ELISA. The reagents used in PAAT were stable for at least six months. The amount of **pilus protein** per bacterium as measured by PAAT was directly proportional to the average number of pili per bacterium as measured by electron microscopy. The test was Bact. nodosus serotype specific.

L36 ANSWER 61 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:276457 BIOSIS
DOCUMENT NUMBER: BA76:33949
TITLE: SEROLOGICAL IDENTIFICATION OF PILUS ANTIGEN AND OTHER PROTEIN ANTIGENS OF BACTEROIDES-NODOSUS USING ELECTRO BLOT RADIO IMMUNOASSAY AFTER ELECTROPHORETIC FRACTIONATION OF THE PROTEINS ON SODIUM DODECYL SULFATE POLY ACRYLAMIDE GELS.
AUTHOR(S): O'DONNELL I J; STEWART D J; CLARK B L
CORPORATE SOURCE: DIVISION OF PROTEIN CHEMISTRY, CSIRO, PARKVILLE, VIC. 3052.
SOURCE: AUST J BIOL SCI, (1983) 36 (1), 15-20.
CODEN: AJBSAM. ISSN: 0004-9417.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB Proteins of various B. nodosus strains were fractionated by polyacrylamide gel electrophoresis in buffer containing sodium dodecyl sulfate. Transfer of these proteins to activated paper was carried out electrophoretically (Electro-Blot). Subsequent sequential reaction of these proteins with sera from sheep which had been naturally infected with a particular strain of B. nodosus showed that there were **antibodies** to many (10-15) components. **Antibodies** to **pilus proteins** were recognized; the most predominant **antibody** in natural infections was to antigens with MW of .apprx. 75,000. Assessment of the paper-bound antigens by successive reactions with antisera from sheep infected with other strains of B. nodosus gave a semiquantitative picture of cross-reactions.

L36 ANSWER 62 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:199333 BIOSIS
DOCUMENT NUMBER: BA75:49333
TITLE: PROTECTION OF SHEEP AGAINST EXPERIMENTAL FOOT ROT BY **VACCINATION** WITH PILI PURIFIED FROM BACTEROIDES-NODOSUS.
AUTHOR(S): EVERY D; SKERMAN T M
CORPORATE SOURCE: WALLACEVILLE ANIMAL RESEARCH CENTRE, RESEARCH DIV., MINISTRY AGRICULTURE FISHERIES, PRIVATE BAG, UPPER HUTT.
SOURCE: N Z VET J, (1982) 30 (10), 156-158.
CODEN: NEZTAF. ISSN: 0048-0169.
FILE SEGMENT: BA; OLD
LANGUAGE: English
AB Merino sheep **vaccinated** with either whole B. nodosus organisms, a crude surface antigen preparation or highly purified pili (> 99% homogeneity) in oil adjuvant, developed significant resistance to artificial footrot infection when compared with **unvaccinated** control sheep inoculated with saline-in-oil emulsion (Freund's incomplete adjuvant) alone. The pili-**vaccinated** sheep generally had higher K-agglutinating **antibody** titers than sheep **vaccinated** with whole B. nodosus. These results confirmed the role of B. nodosus **pilus protein** both as a protective antigen and the

K-agglutinogen. **Vaccines** prepared with Freund's incomplete adjuvant containing either purified pili, crude pili or B. nodosus whole cells did not produce significantly different injection-site reactions.

L36 ANSWER 63 OF 67 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1983:77509 BIOSIS
DOCUMENT NUMBER: BR25:2509
TITLE: **ANTIBODY** PROFILES IN LOCAL AND DISSEMINATED GONOCOCCAL INFECTION.
AUTHOR(S): HADFIELD S G; GLYNN A A
CORPORATE SOURCE: DEP. BACTERIOL., ST. MARY'S HOSP. MED. SCH., LONDON W2 1PG.
SOURCE: 144TH MEETING OF THE PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND, CAMBRIDGE, ENGLAND, JAN. 5-8, 1982. J PATHOL, (1982) 138 (1), 57.
CODEN: JPTLAS. ISSN: 0022-3417.
DOCUMENT TYPE: Conference
FILE SEGMENT: BR; OLD
LANGUAGE: English

L36 ANSWER 64 OF 67 MEDLINE on STN DUPLICATE 31
ACCESSION NUMBER: 83025096 MEDLINE
DOCUMENT NUMBER: 83025096 PubMed ID: 6127165
TITLE: Pilus expression in Neisseria gonorrhoeae involves chromosomal rearrangement.
AUTHOR: Meyer T F; Mlawer N; So M
SOURCE: CELL, (1982 Aug) 30 (1) 45-52.
Journal code: 0413066. ISSN: 0092-8674.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198212
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19950206
Entered Medline: 19821218

AB The Neisseria gonorrhoeae **pilus protein** is one of the major **antigenic determinants** on the cell's surface. It is comprised of identical subunits of approximately 18 kd and plays a role in the infectivity and virulence of the organism. We have cloned the gene encoding a gonococcal **pilus protein** into Escherichia coli, and, using one of these clones as a probe in hybridization studies, we have shown that conversion of the pilus positive to pilus negative state in N. gonorrhoeae involves chromosomal rearrangement. Although the **pilus protein** is produced by E. coli, it does not appear to be assembled on the surface of the cell in native form.

L36 ANSWER 65 OF 67 MEDLINE on STN DUPLICATE 32
ACCESSION NUMBER: 82031292 MEDLINE
DOCUMENT NUMBER: 82031292 PubMed ID: 6116723
TITLE: Gonococcal pilus **vaccine**. Studies of antigenicity and inhibition of attachment.
AUTHOR: Tramont E C; Sadoff J C; Boslego J W; Ciak J; McChesney D; Brinton C C; Wood S; Takafuji E
SOURCE: JOURNAL OF CLINICAL INVESTIGATION, (1981 Oct) 68 (4) 881-8.
Journal code: 7802877. ISSN: 0021-9738.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CLINICAL TRIAL)
(CONTROLLED CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198112
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19970203
Entered Medline: 19811221

AB A gonococcal pilus **vaccine** or placebo was injected subcutaneously or intramuscularly into 71 human volunteers. The **vaccine** was found to be safe. The principal adverse reaction was a complaint of a sore arm, which was caused, at least in part, to the volume of material injected. 6 of 64 (9%) volunteers receiving the larger doses also complained of malaise. The **vaccine** was found to be antigenic. All of the volunteers developed an **immunoglobulin** class-specific **antibody** response as measured by a solid phase radioimmunoassay. The **antibody** was capable of blocking the attachment of gonococci to epithelial cells. A slight **antibody** response was also demonstrated to gonococcal lipopolysaccharide but the **antibody** responsible for blocking attachment of gonococci was directed entirely at the **pilus protein**. The stimulated **antibodies** were shown to crossreact with isolated pili of heterologous gonococcal strains and to block the attachment of heterologous gonococci. Absorption of immune sera by a heterologous pilus reduced the inhibition of attachment **antibodies** to pre-immune level, suggesting that the immune response was directed at a common pilus determinant.

L36 ANSWER 66 OF 67 MEDLINE on STN
ACCESSION NUMBER: 81152798 MEDLINE
DOCUMENT NUMBER: 81152798 PubMed ID: 6111121
TITLE: Purification of pili from Escherichia coli and Salmonella typhimurium. A preliminary report.
AUTHOR: Korhonen T K
SOURCE: SCANDINAVIAN JOURNAL OF INFECTIOUS DISEASES. SUPPLEMENTUM, (1980) Suppl 24 154-7.
Journal code: 0251025. ISSN: 0300-8878.
PUB. COUNTRY: Sweden
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198105
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19950206
Entered Medline: 19810513

AB A new **procedure** was developed for the purification of pili from Escherichia coli and Salmonella typhimurium. The pili were removed from the bacterial cells by mechanical agitation and then concentrated by precipitation with ammonium sulfate. After dialysis, the pili were solubilized in a buffer containing deoxycholate. This **treatment** did not solubilize the outer membrane proteins. The pili were then separated by ultracentrifugation in a sucrose gradient and finally passed through a Sepharose 4B column in a 6 M urea buffer. The pili were not dissociated by concentrated urea and they eluted in the void volume of the Sepharose 4B column. Because the enterobacterial flagella dissociate in concentrated urea, this **procedure** enables the purification of the pili from the flagellated strains also. The purified **pilus proteins** were free from lipopolysaccharide and outer membrane proteins. The molecular characteristics and the binding properties of these **pilus proteins** are briefly described.

L36 ANSWER 67 OF 67 EMBASE

on STN
ACCESSION NUMBER: 75118377 EMBASE
DOCUMENT NUMBER: 1975118377
TITLE: Studies on gonococcus infection. V. Observations on in vitro interactions of gonococci and human neutrophils.
AUTHOR: Swanson J.; Sparks E.; Zeligs B.; et al.
CORPORATE SOURCE: Dept. Pathol., Univ. Utah Coll. Med., Salt Lake City, Ut. 84132, United States
SOURCE: Infection and Immunity, (1974) 10/3 (633-644).
CODEN: INFIBR
DOCUMENT TYPE: Journal
FILE SEGMENT: 013 Dermatology and Venereology
004 Microbiology
028 Urology and Nephrology
LANGUAGE: English

AB The association of in vitro human leukocytes with pilated, N. gonorrhoeae type 2 exceeds that for nonpilated, type 4 organisms but is less than that for nonpilated, type 4 gonococci. The two nonpilated forms of gonococci (types 4 and 4) attach to tissue culture cells to a much lesser extent than do pilated, type 2 organisms of the same strain. Trypsin **treatment** of either pilated (type 2) or nonpilated (type 4) gonococci markedly reduces the attachment ingestion of these organisms with leukocytes, but the same trypsin **treatment** does not depilate the type 2 organisms nor visibly alter the morphology of their pili. Similar reductions in association with leukocytes are found if the gonococci are **pretreated** with chymotrypsin, heat or glutaraldehyde. High levels of association between gonococci and leukocytes are reestablished if the trypsin or chymotrypsin **treated** organisms are reincubated in protease free medium. These data suggest that interactions between gonococci and human neutrophils are mediated through surface characteristics of the bacteria, different from those which influence attachment of the organisms to tissue culture cells. In the latter instance, pili appear to positively influence gonococcal attachment, whereas in the former a nonpilus bacterial cell wall **nonpilus protein** is probably the major determiner in the interaction between leukocytes and gonococci.